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ABSTRACT

The Exceptional Children and New Technology project sought to meet the instructional needs of physically handicapped, emotionally disturbed, learning disabled, and mentally handicapped children through the use of computer technology. The goals of the project were to test the instructional value of adaptive/assistive devices with exceptional children and to determine the best products, software, and applications. Four North Carolina elementary and middle schools were chosen as pilot sites. Representative adaptive/assistive devices and software were purchased, compatible with Apple II equipment. The subject area addressed was elementary-level language arts and reading. Teachers and coordinators were trained to use the products and developed learning activities with the resources. Guidelines were developed to assist teachers in using the new technology in their classrooms. For physically handicapped students, Apple IIe keyboard modifications were implemented. Approximately 20 learning activities are described in this guide. Each activity description provides appropriate ages, level of functioning, exceptionality, skill objective of the activity, basic education program correlation, software and hardware used, and a brief lesson plan. The guide concludes with: (1) forms for sample lesson plans and computer log sheets, and (2) listings of software for use with exceptional children. (JDD)

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ACCESS: EXCEPTIONAL CHILDREN AND TECHNOLOGY

Division of Computer Services
Media and Technology Services
Department of Public Instruction
1988

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EXCEPTIONAL CHILDREN AND TECHNOLOGY

PROJECT OVERVIEW

Exceptional Children and New Technology: Pilot Project Overview

Exceptional Children require different methods and techniques to meet the instructional needs of its populations. Computer technology offers potential for exceptional childrens' instructional needs. This new technology offers a way for students with handicapping conditions to learn, practice, and reinforce basic skills and subject area content in a controlled environment and at a rate to match students' abilities. The new technology also offers via peripheral equipment and software an opportunity to students with communications disorders, visual and hearing impairments, learning disabilities, or physical and perceptual limitations to compensate for their disabilities.

The Exceptional Childrens' program emphasis can be divided into two basic areas for computer planning. One area deals with the students who are physically handicapped. Children in this category may experience visual, hearing and speech, or motor control problems. Their intellectual ability may, or may not be impaired. Their instructional needs are usually specialized, and their interaction with computer hardware and software should be specialized (for example, aspeech synthesizer for hearing impaired, large print or braille output for visually impaired, and special input devices for those with motor control problems.) Generally these adaptive/ assistive devices can be used with the instructional hardware and software purchased by the school.

The second group of exceptional children could include Emotionally Disturbed, Learning Disabled, Mentally Handicapped, and others with learning problems.. These students utilize drill and practice, tutorial instruction with emphasis on practice and repetition for basic skills applications. These students do not usually need hardware adaptation, but the software programs used require careful selection and in some cases modification. For example, the pace of the software, along with its visual stimulation and student feedback are all important.

Given the needs of exceptional children, the development of technology, and the need for documented information, the Division of Computer Services in cooperation with the Division of Exceptional Children developed a pilot project. The goal of the project was 1) to test the instructional value of adaptive/assistive devices with exceptional children, 2) to determine the best products, software, and applications, and 3) to disseminate that information.

Four pilot sites were chosen with consideration given to large units, small units, a variety of children and learning needs, and recommendations from Exceptional Childrens' staff and system-level coordinators. Representative adaptive/assistive devices and software were purchased. The decision was made to use Apple II family equipment and to address elementary grade areas of language arts and reading. Then teachers and coordinators from these systems were trained to use the products, gave input into further purchases, and took the resources to try in the actual learning situations. The names and addresses of these resource people are included in this document. At each site, the teacher developed learning activities with the given resources. These learning activities are also included in this guide. The pilot group felt the onsite testing of the devices and the software added to the value of this project.

After the project is completed during the 1987-88 school year, a master set of the hardware and software will be available for preview at the Media Evaluation Center on Reedy Creek Road, Raleigh. The project information will be shared with interested educators.

PILOT PROJECT PERSONNEL AND SITES

EXCEPTIONAL CHILDREN AND NEW TECHNOLOGY
Pilot Project Resource People

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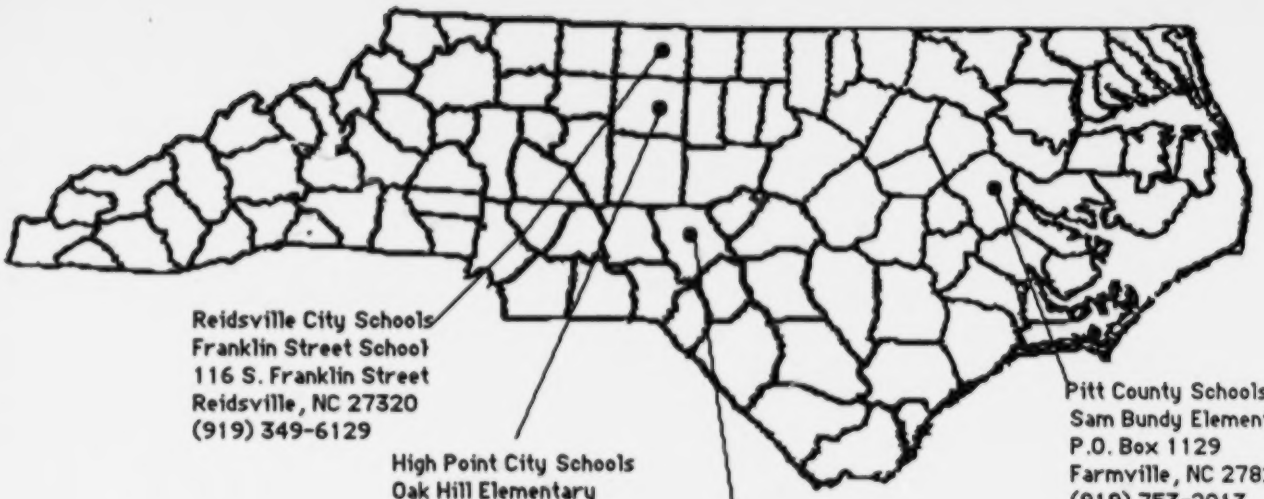

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Exceptional Children and Microcomputers

Pilot Project Sites

THE COMPUTER AS AN INSTRUCTIONAL TOOL

The Computer as an Instructional Tool

It provides

- motivation
- incentive
- a new method for instructional delivery
- reinforcement
- management capabilities
- control of their environment for exceptional children

It

- enables students with mental and physical handicaps
- is a problem solver
- is an impersonal monitor of performance with immediate feedback

PLANNING FOR EXCEPTIONAL CHILDREN AND TECHNOLOGY

STEPS TO TAKE

STEPS TO TAKE

TO USE NEW TECHNOLOGY

WITH EXCEPTIONAL CHILDREN

- **ASSESS THE LEARNING SITUATION**

  self-contained
  mainstreamed
  individual learning styles

- **IDENTIFY SPECIFIC NEEDS**

  e.g. ability level, limitations of input, sight, sound, etc.

- **IDENTIFY SPECIFIC SUBJECT AREAS**

  e.g. reading, mathematics, writing, social studies, media, etc.

- **IDENTIFY SPECIFIC SKILL TO TARGET AND LEVEL OF INSTRUCTION**

  e.g. in reading the areas of structural analysis, blends, sight words

- **SELECT SOFTWARE APPROPRIATE FOR IDENTIFIED NEEDS**

- **SELECT HARDWARE AND PERIPHERALS FOR IDENTIFIED NEEDS**

  Check the machine cards to facilitate software

USING MICOCOMPUTERS AND SOFTWARE WITH

EXCEPTIONAL CHILDREN

HELPFUL HINTS

Using Computers and Computer Software with Exceptional Children: Helpful Hints

Software

Choose software that:

- •is flexible with the ability to change input levels and speed
- •is modifiable for greatest variety of uses and styles
- •is user friendly
- •branches to needed levels of students
- •is age appropriate for students
- •has single concepts
- •has few distractions on the screen, and the screen is not too busy or full
- •permits teacher options such as level selection, speed, content, sound, record keeping
- •has good documentation with follow-up activities and worksheets
- •provides good, positive feedback to student user

Be aware of

- •software capabilities before use. Preview software for best results.
- •varying levels of program. Consider gaps in sequencing of tasks and programs
- •software that reinforces errors

Management

Choose software that has

- •record keeping capabilities for monitoring students
- •teacher options for input and use

Consider

- •a minimum of 15 minutes 3 times per week with computer, or 1 day per week
- •ability grouping for software use
- •the effectiveness of certain activities in a group situation, or individually
- •students performance printouts for record keeping
- •students with time to work individually for follow-up activities
- •folders for stories, words, and records of computer usage

Physical Arrangements and Facilities

Consider

- •one computer per classroom, not a lab situation for exceptional students
- •a mobile cart for the computer, preferably with lockable wheels and adjustable table
- •adjusting the computer and/or the monitor to a height or angle better suited to user. e.g. the angle of the monitor becomes critical for a student with a head wand.
- •switches for students with limited abilities
- •isolating the computer visually from the group
- •contolling sound options in software

Training Needs

User should have

- •beginning computer literacy(keyboarding, off, on procedures, etc.)
- •understanding of peripheral installation
- •training on use of management options
- •basic ways to introduce software to students
- •knowledge of wide variety of hardware and software as well as peripherals available
- •time to work with hardware and software prior to use

Hardware

A suggested configuration includes

- •a color monitor
- •a micocomputer with 128K
- •a disk drive, preferably two
- •a printer

Additional Peripherals

Additional items include

- •a Touch Window (needs to be kept clean for best reads)
- •Muppet Learning Keys
- •Echo II+ speech synthesizer
- •a mouse

Next Steps

Consider

- •an adaptive firmware card, especially for the physically handicapped (This card permits use of alternative input devices with software.)
- •switches to accompany the adaptive firmware card for more physically limited students
- •additional teacher training to utilize computer more creatively
- •a clearinghouse of additional appropriate software

Apple IIe Keyboard Modifications for Exceptional Students

For exceptional students the repeat key functions and the "caps lock" function poses problems for easy efficient use. These two key functions may be modified. To adapt the Apple IIe one needs to seek the aid of the systems' computer technician, purchase some nominally priced items to permit the changes to be reverseable for regular uses, and follow the directions below. (The directions are furnished by Closing the Gap Inc.)

CAPS LOCK MODIFICATION

Here is a modification for the shift and control keys designed to allow them to lock in a down and unlock in an up position. This modification is useful for single digit, head or mouth stick typists who do not need a keyguard for stability.

(Description is taken from the December/January 1983/1984 CTG)

"The Apple IIe keyboard is actually a nest of small electric switches soldered together on a printed circuit board. One of these switches is pictured below.

The switches are identical, except for the one in the caps lock position, which happens to have an extra, tiny spring that holds the key down when you press it once, and lets it up when pressed again. This locking key will fit in the other places on the keyboard, so why not have a shift and control lock as well. All it takes is: removal of the entire machine cover (a few screws), two screws release the keyboard itself, and then just desolder the present control key and either or both shift keys, remove them and solder in the locking switches. The various marked keys fit on the plastic posts of the switches, so the control and shift buttons go right back on, leaving no apparent change to the keyboard (the shift button can require removal of a little plastic with a sharp craft knife to fit). Now when you need a shift or control with another key, lock down the shift or control and go on to the desired key, remembering that you will have to go back and "unlock" your shift and control.

This change can be easily accomplished by your dealer or service center. The locking switches cost about $4.00 apiece (save the old keys in case some other one breaks). If doing the work yourself, make sure the power is off and you use the proper style soldering iron; a big, industrial welder will melt the whole computer! Also, a desoldering device is a help.

REPEAT KEY MODIFICATION.

Here are the directions for the modification needed to disable the repeat key function on the Apple IIe microcomputer. All three methods require the removal the 40-pin chip (KR 3600-017) located directly in front of (toward the keyboard from) the keyboard cable connector on the right edge of the main printed circuit board.

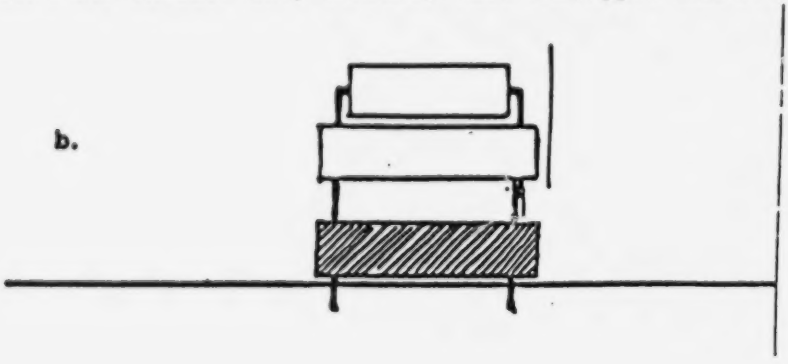
a. Quick but permanent:

The easiest way to defeat the auto-repeat function is simply to remove the keyboard encoder chip (KR 3600-017) and bend pin #5 so that is sticks out to the side. Then simply reinsert the keyboard encoder chip in its socket so that pine #5 misses the socket and sticks off to the side.

b. Quick and removable:

For this modification, you will need another 40-pin socket (available from Radio Shack) with flat pins coming out of the bottom (round pins may stretch the connector currently in the Apple). Take your new 40-pin socket and carefully clip off the 5th pin (pin #5). Now pull the keyboard encoder chip out of the Apple and insert it into this socket. Now insert your new socket (with pin #5 clipped off) into the Apple keyboard socket. The keyboard encoder chip can now be carefully reinserted into the new socket on top. You should now have two sockets piggy-back, with the keyboard encoder chip plugged into the top of both of them. However, since the socket in the middle has pin #5 clipped off, that signal cannot get to the main Apple Board, and the autorepeat function is defeated. To reinstate the auto-repeat function, simply remove your new socket from the middle, and reinsert the encoder chip directly into the Apple socket.

b.

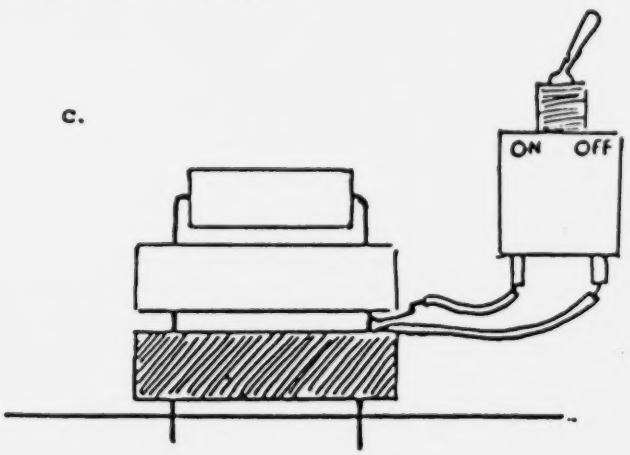


c. On and Off Repeat Function

If your Apple is to be used by many different users, some of who would like the repeat feature and some who do not, the following modification can be made.

Follow the steps for Modification b, except do not clip off the pin on your new socket. Instead, simply bend it outward and up. Then carefully solder one of two wires to the pin which has been bent upward. Insert a second stiff wire into pin #5 on the Apple socket. Be sure that the insulation on this wire prevents it from contacting the bent pin when you insert the new socket into the Apple socket. Now put your keyboard encoder ship into the top of the new socket and connect a toggle switch to the other end of the two wires. Now, when you flip the switch in one direction you will have auto-repeat; when you flip the switch in the other direction, you will not. The switch can be mounted in any convenient location, either inside or outside the Apple.

c.



If you feel uncomfortable attempting this modification of the Apple IIe on your own, take this section of the manual to your computer resource person, technical support group or Apple dealer and they can do it for you.

USING MICROCOMPUTERS AND SOFTWARE WITH

EXCEPTIONAL CHILDREN

LEARNING ACTIVITIES

Using Microcomputers and Software with Exceptional Children:

Learning Activities

As participants in the Exceptional Children and Technology pilot project, each site teacher was asked to submit lesson ideas. The teacher was to try the hardware and software with students in their class to explore suitable applications, best subject matter integration, class introduction, and management ideas. The sample lessons included also reflect their judgement of grade level, level of functioning, and exceptionality, based on their class. Certainly different levels may be appropriate. Other teachers may check the Basic Education Program correlations and other suggestions as a guide for using the programs in their classroom situation. The software included is generally reasonable in price and is primarily for elementary language arts.

The participants in the project have all been enthusiastic about using computers with students and hope their suggestions will help you. Use their first steps to help you make a positive start with new technology in your classroom.

Exceptional Children and Technology

Activity: Use of the computer to teach vocabulary words.

Pilot Site: Student Age/Level of Function/Exceptionality

Age: 6 and above

Level of Functioning: First grade and up

Exceptionality: SLD, EMH, TMH, B/EH

Subject: Vocabulary

Skill: To increase word recognition through reinforcement with pictures

Basic Education Program Correlation: Communication Skills 10.1 Distinguish between words.

Software: Paint with Words - MECC A158

Hardware: Printer, optional

Plan:

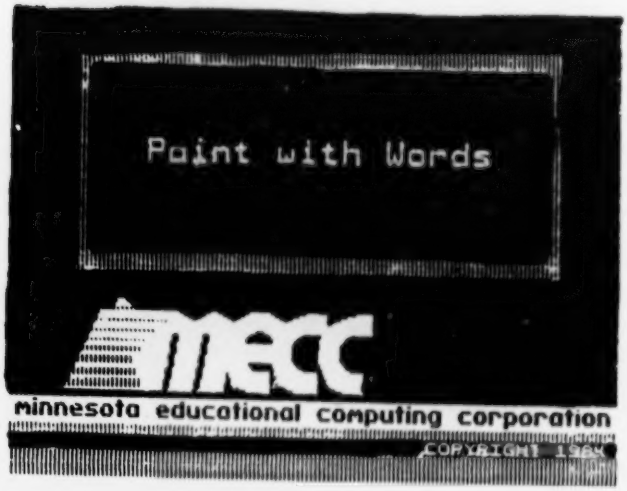
Introduction: Teacher explains that students will take a trip today on the computer. They choose the destination and the things they will see there. At the end of their trip, they will print a picture of their visit.

Instruction: Students select the place to visit and the things they will see. On the screen are a background graphic at the top and eight words at the bottom. The student moves words into the picture by using the arrow keys and presses the space bar to make a picture of the word appear. After words have been placed in the picture, the picture and words may be printed or saved on a disk. Depending on the student's reading ability, the teacher may need to provide assistance on word recognition.

Guided Practice: Student reads words as they are placed and forms printed picture after instruction.

Enrichment/Follow-up: Teacher can make flash cards of the words to reinforce fluent recognition. Student can write or tell story about his picture using all the words.

Helpful Hints: Print the picture at the top of the paper, fold the bottom up, and staple on the sides to form an envelope to hold flash cards. A large folder could be used to keep picture envelopes. Write the categories to choose from on the disk on the of the folder. Check categories as they use them.



corn	cow	farmer	garden
goat	hen	pig	tractor
STOP		^ BACKGROUND	

corn	cow	farmer	garden
goat	hen	pig	tractor
STOP		BACKGROUND	

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corn	cow	farmer	garden
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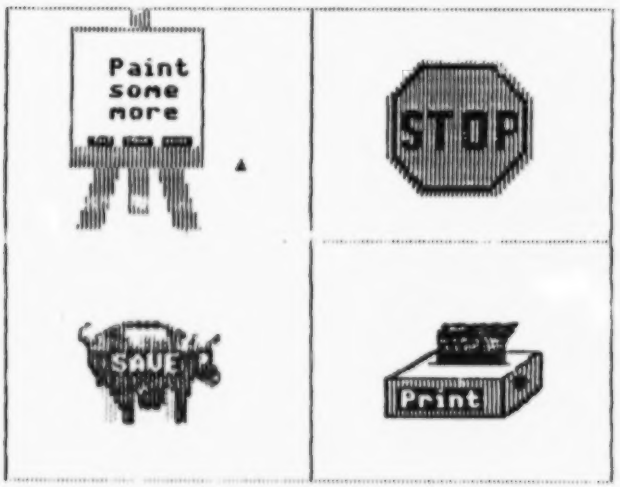
STOP		BACKGROUND	



Activity: Attending to screen during increasing and decreasing numbers of pictures.

Pilot Site: Student Age/Level of Function/Exceptionality:

Age: 11 years old
Level of Functioning: 11 months old
Exceptionality: Severe Mental Retardation

Subject: Communicating

Skill: To develop attending skills

Basic Education Program Correlation: Communication Skills K 1.1 - Viewing

Software: Sticky Bears - Numbers, Weekly Reader

Hardware:

Plan:

Introduction: Student is allowed to explore the different parts of the computer.

Instruction: Student is instructed to look at the monitor. Attention may be directed by tapping the monitor and immediately starting the program.

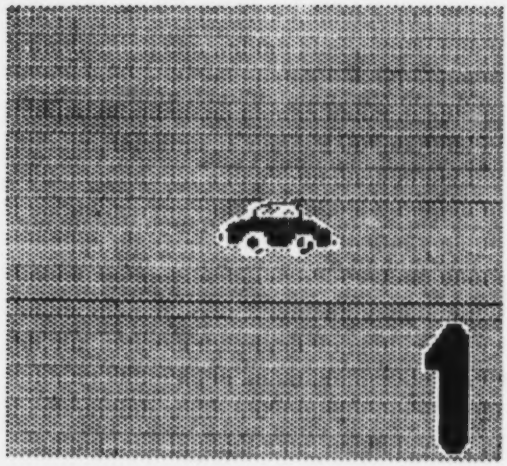
Guided Practice: Teacher elicits changes in the picture on the monitor and observes student behavior.

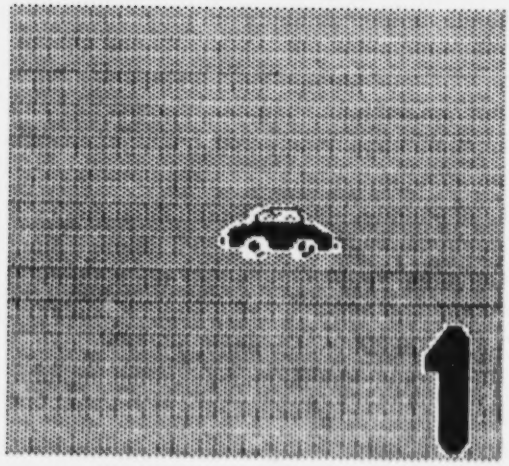
Enrichment/Follow-up: Attending to different situations and activities in the classroom for eight minutes.

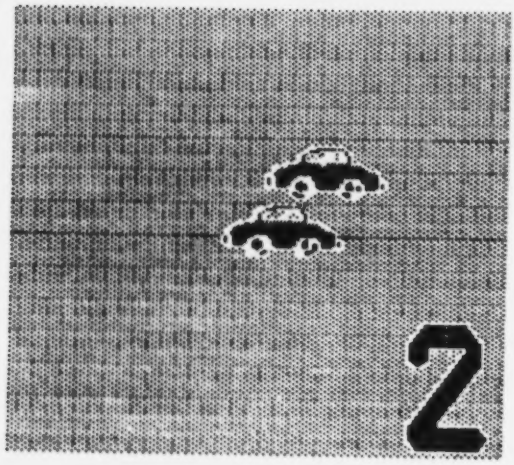
Helpful Hints: Any program for early skills which is colorful would be good.

STICKYBEAR NUMBERS
OPTIMUM RESOURCE INC.

PRESS ANY NUMBER OR USE THE SPACE BAR.







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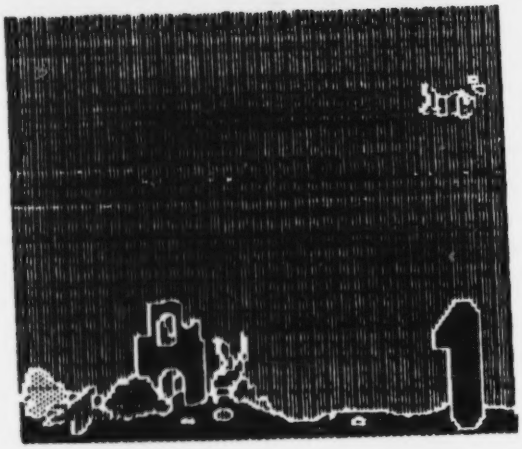

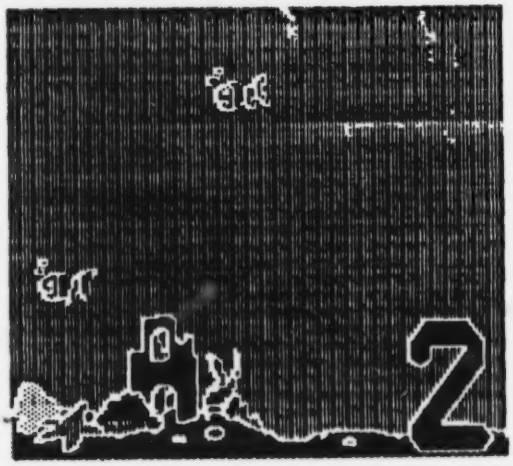

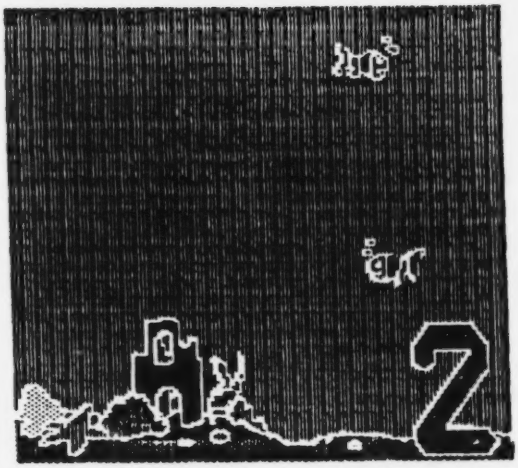

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Activity: Student matches pictures of objects which have the same initial sound.

Pilot Site: Student Age/Level of Function/Exceptionality:
Age: 8 years old
Level of Functioning: 5 years old
Exceptionality: Severe Cerebral Palsy (nonverbal)

Subject: Readiness Skills

Skill: To recognize initial consonant sounds

Basic Education Program Correlation: Communication Skills/Literature K 10.4

Software: Sound Ideas, Consonant Sounds, Houghton-Mifflin

Hardware: Echo II + speech synthesizer

Plan:

Introduction: The student recites repeating sounds of familiar letters and words as they are displayed by the computer. Lip closure is incorporated in assisting the child to attempt the initial sound.

Instruction: Instructions concerning how to use the program for the child are given auditorily via Echo II+. Further instructions can be given as needed, such as repeating the names of objects.

Guided Practice: Student identifies appropriate picture, then is assisted in using the keyboard to respond appropriately.

Enrichment/Follow-up: Find objects in and around classroom that have the initial sound "m." Emphasize words beginning with "m" used in daily activities. Generate a list of pictures of objects that have the initial "m" sound.

Sound Ideas
Consonants

Press the Space Bar

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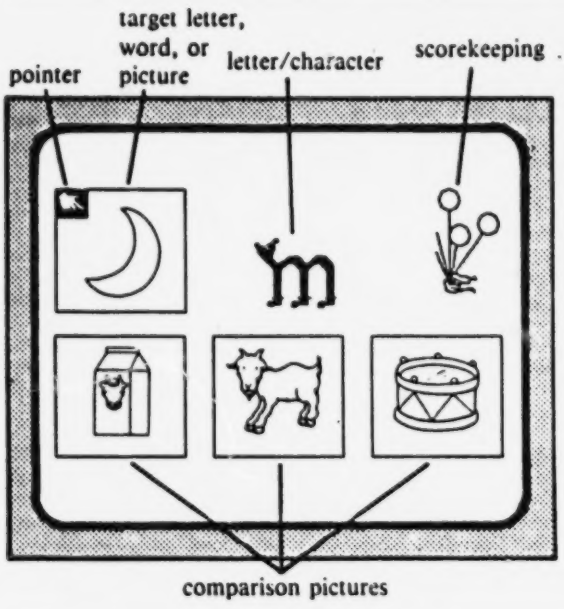
PROGRAM SEQUENCE AND OPERATION

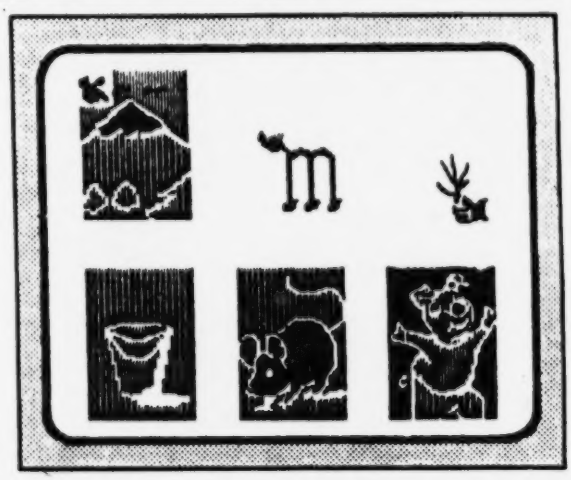
Program Sequence

Sound Ideas **progresses through different levels of lesson difficulty. The earliest lessons start with simple auditory discrimination of letter sounds. This is followed by a gradual introduction of the letter or letters which correspond to that sound. The most difficult task requires that the child apply his/her knowledge of the letter-sound correspondence in a simple decoding task.**



PROGRAM STRUCTURE. **All lessons in *Sound Ideas* are variations of the format shown here. In each consonant or vowel lesson, the computer's voice asks the child to make a comparison between a target item and three pictures. Depending on the level of difficulty, the target item may be a picture, a picture with a letter, a letter, or a word. There are four basic formats used in *Sound Ideas*.**

LEVEL 1. **At the earliest level, the child is shown a target picture and must identify which of the comparison picture names has the same beginning sound as the target picture name. For this level, no reference is made to the letter(s) that might make that sound. The target in this example is a picture of a mountain and the three pictures are pail, mouse (the correct answer), and pig.**



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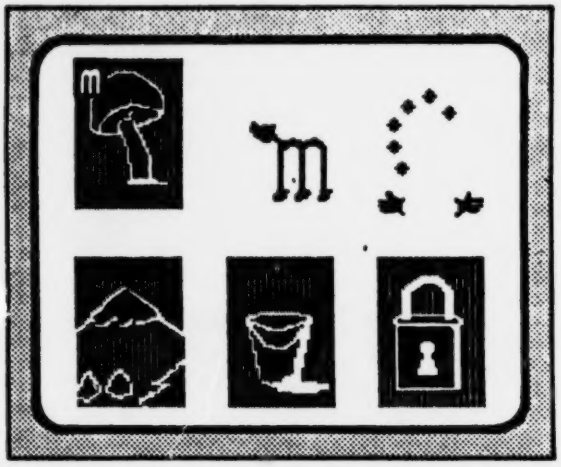
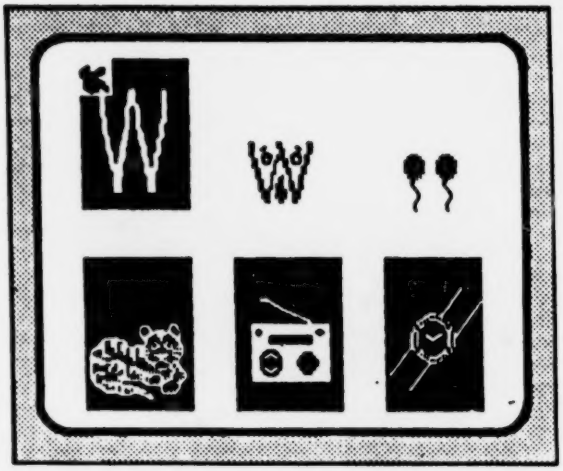
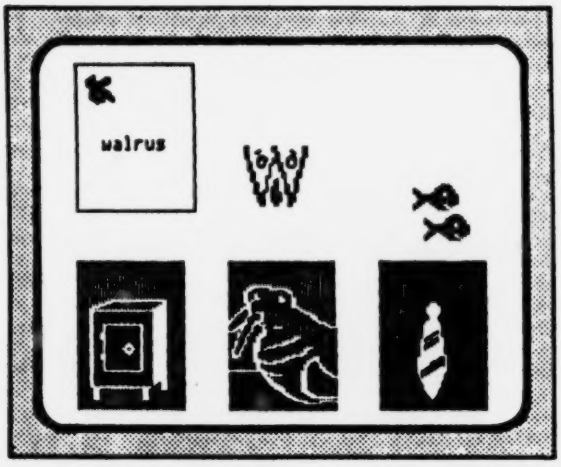


LEVEL 2. This level also uses a picture target, but only as a reference. The child's primary task is to find the comparison picture whose name begins with the sound for a target letter. In the example, the correct picture is that of a mountain. A small image of the target letter replaces the pointing finger as the cursor. In some of the Level 2 lessons, the word form is shown (e.g., **mountain, pail,** and **lock** would be printed under the picture after they were picked) as part of the reinforcement message.

LEVEL 3. Now the picture reference is removed, and the child must make the comparison solely on the basis of the letter or letters. If extra help is needed, a target picture can be briefly recalled to aid the child in making their choice. This help feature is more fully described in the section describing the extra help key. In *Vowels,* the target is a word containing the vowel and its pictorial representation. As in *Consonants,* the child must find the comparison picture that has the same vowel sound.





LEVEL 4. The letter is now placed within the context of a word and the student is encouraged to use the letter as a cue in matching the target word with its picture. Comparison pictures are selected to insure that the correct choice can be made solely on the basis of the target letter. In this example, only **walrus** begins with the appropriate initial sound.

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Activity: Use of the computer and vocabulary cards to determine likenesses and differences in objects and concepts.

Pilot Site: Student Age/Level of Function/Exceptionality:

Ages 7-9
Level of Functioning: K-3
Exceptionality: physically handicapped

Subject: Language Development

Skill: To develop visual discrimination

Basic Education Program Correlation K 5.1 Communication Skills: Viewing

Software: Odd One Out, Sunburst

Hardware: Touch Window (suggested)

Plan:

Introduction: Teacher presents objects in sets, with one member being unlike the others (balls, jelly beans, blocks). Discussion follows on various characteristics such as color, size, and function.

Instruction: Students select a picture of the different objects by touching the object on the screen of the Touch Window. As they decide, students tell how three of the objects are alike and why one is different.

Guided Practice: Teacher records scores of students and monitors progress throughout the various levels of difficulty.

Enrichment/Follow-up: Vocabulary relating to the computer examples are developed, and the students see the vocabulary in lists or on cards. Students are encouraged to observe differences in various objects with which they come in contact throughout the day, as well as in new concepts as they are being introduced.

Helpful Hints: There is a considerable gap between the levels of Odd One Out regarding reasoning skills. The teacher will need to carefully monitor progression of skills for certain students.

Odd One Out

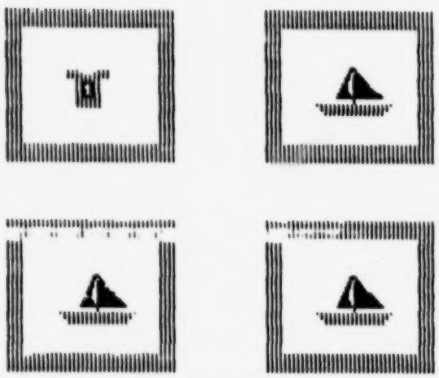
Program design: Donna Stanger
Programmed by: Paul Elseth & Lon Koenig

Permission to copy granted by Sunburst

ODD ONE OUT

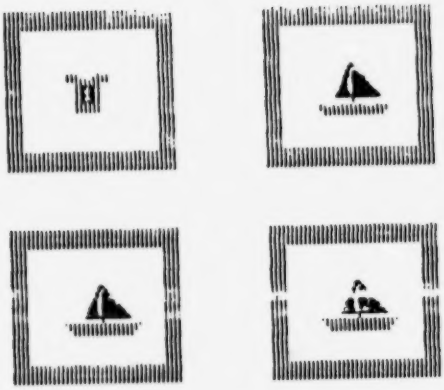
1. PICTURES.....
2. LETTERS.....ABC
3. NUMBERS.....123
4. WORDS.....
5. MATH.....1+2

Which one (1-5)?



Which one?

Please type: P for ☐ G for ☐
B for ☐ O for ☐



Right!

Press RETURN to go on.

Activity: Use of the computer to enhance auditory memory and relate computer stimuli to information already known.

Pilot Site: Student Age/Level of Function/Exceptionality:

Age: Primary, ages 7-9
Level of functioning: Readiness to second grade
Exceptionality: Educably Mentally Handicapped

Subject: Music

Skill: To develop language and listening skills

Basic Education Program Correlation: K 2.6 Music
K 2.6 Listening Communication Skills

Software: Memory Building Blocks, Sunburst

Hardware: Touch Window (suggested)

Plan:

Introduction: Teacher presents sounds that are alike and different using musical instruments and tape recordings. Children then list familiar tunes, or they may sing familiar songs.

Instruction: Using the Touch Window, students match like tunes. Students identify tunes as they are presented. As correct responses are given, reinforcement is given by the computer, and the gameboard has fewer distractors.

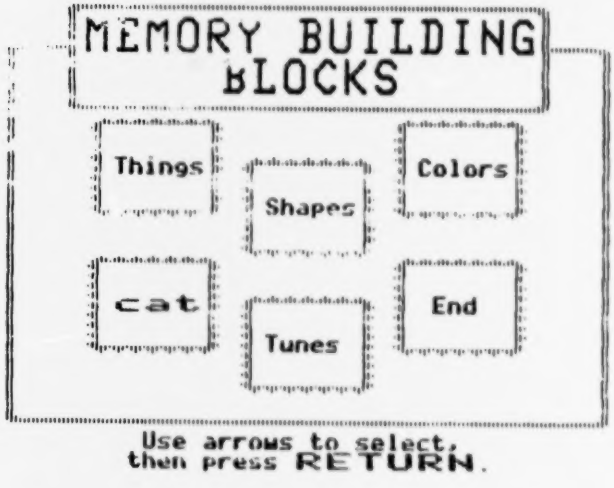
Guided Practice: Teacher records scores of students during the activity and monitors progress.

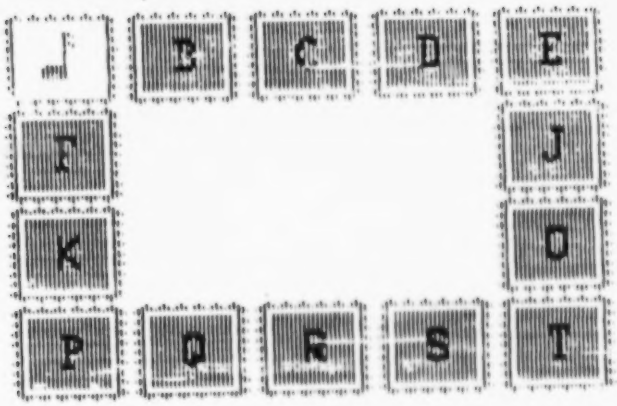
Enrichment/Follow-up: Students may investigate the tunes presented, rhythms, and pitch.

Helpful Hints: The gameboard of Memory Building Blocks may be adjusted depending on the ability level of the student. A gameboard with fewer distractors will be easier to complete, and might be an appropriate beginning activity.

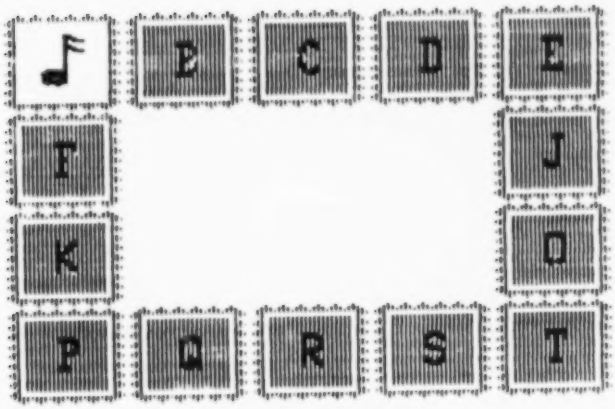
MEMORY BUILDING BLOCKS

Designed by Donna Stanger
Programmed by David Owen
Permission to copy granted by Sunburst

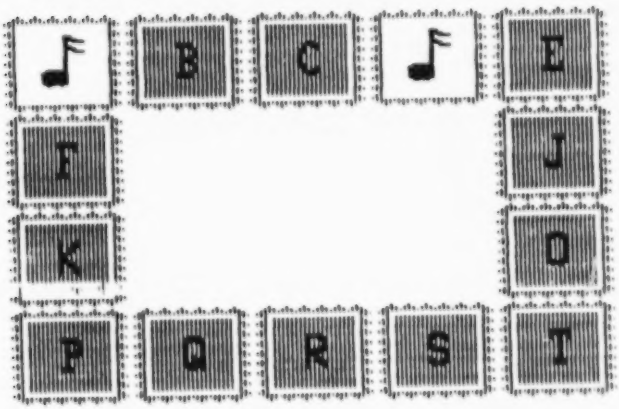




Box A



Box A and Box ?



::: MATCH :::

Activity: Sequencing pictures, letters, numbers, colors using visual memory.

Pilot Site: Student Age/Level of Function/Exceptionality:

Ages: 13-16
Level of Functioning: K-3
Exceptionality: physically handicapped

Subject: Reading Readiness

Skill: Sequencing

Basic Education Program Correlation: Communication Skills - K - Reading 3.1.1

Software: Simon Says, Sunburst

Hardware: Muppet Keys and/or Touch Window are suggested

Plan: Students will sequence pictures, letters, numbers, and colors through sequential visual memory.

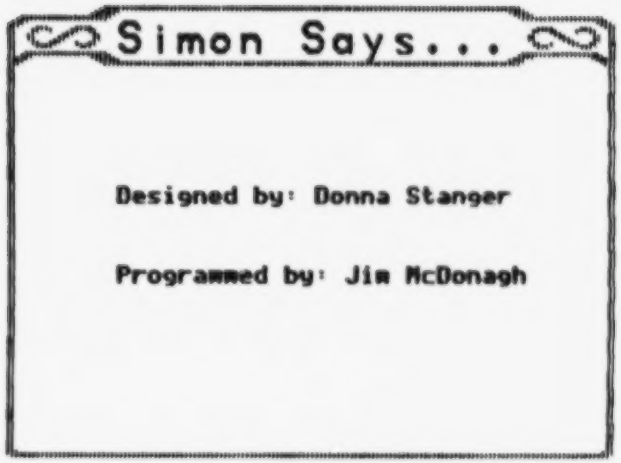
Introduction: Explain that the sequence of events in a story is important for it to make sense. Introduce sequencing skill by having children arrange cartoon pictures in sequence with no more than 5 frames. Mix them up and let them arrange them correctly .

Instruction: Turn on the computer and enter Simon Says software explaining that sequence in relation to letters, colors, and numbers is also important. Explain that they'll have to memorize what is on the screen to continue.

Guided Practice: Each student has guided practice in using Simon Says, emphasizing that he/she must remember the sequence as it appears.

Enrichment/Follow-up: Use a sequencing worksheet with pictures the student must put in order.

Helpful Hints: Switches may need to be made for students with more limited abilities.



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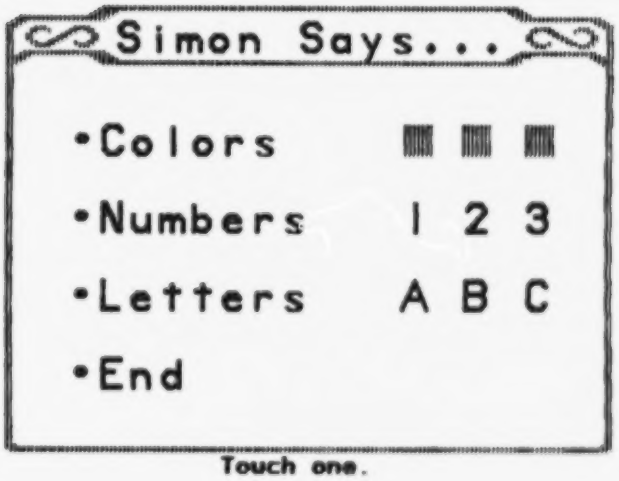


Do you want
directions?

•Yes •No

What is your name?

Mary_

A B C D E F G H

I J K L M N O P

Q R S T U V W X

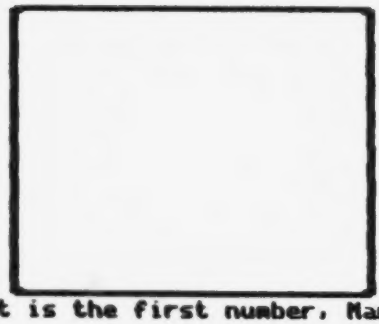
Y Z SPACE DONE ⌫

DIRECTIONS

- In this game you will need to remember numbers in the order you choose.

- Each turn you will choose one more number to add, so the order will get longer and longer.

Touch HERE to continue.



What is the first number, Mary?

1 2 3 4 5 6 7 8 9

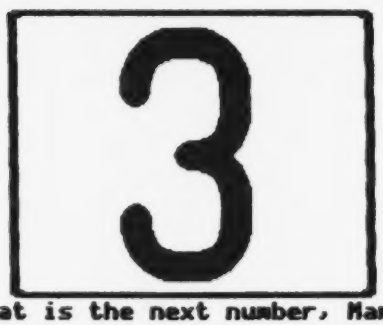
Touch a number.

What do you remember, Mary?

2

1 2 3 4 5 6 7 8 9

Touch a number.



What is the next number, Mary?

3

Touch HERE to continue.

Activity: Visually relating a picture, a shape, a color, or a word.

Pilot Site: Student Age/Level of Function/Exceptionality:

Ages: 13-16
Level of Functioning: K-3
Exceptionality: physically handicapped

Subject: Reading Readiness

Skill: To develop visual discrimination and memory

Basic Education Program Correlation: Communication Skills - K - Viewing 1.1

Software: Memory Building Blocks, Sunburst

Hardware: Muppet Keys and/or Touch Window are suggested

Plan: Students will visually associate pictures, shapes, colors, and words through visual memory.

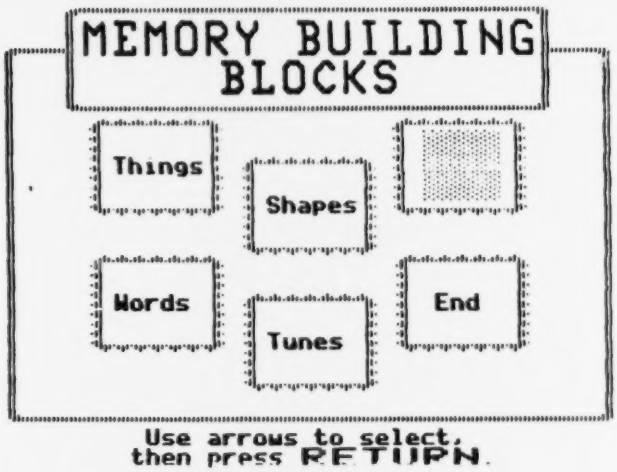
Introduction: Using color cards teacher shows students a color. Tell students they must find that same color from a choice of 5 colors. Make a game of it by turning all colors over, having students choose one; turn it over. Go until student chooses the same color; turning the wrong ones back over until the right color is chosen.

Instruction: Tell students they will play a similar game on the computer. Insert Memory Building Blocks and review directions.

Guided Practice: Each student has guided practice in using Memory Building Block. Emphasize to each student that he/she must try to remember what appears on the monitor each time.

Enrichment/Follow-up: Use a worksheet where the student must visually associate two pictures among others. Individual practice with Memory Building Blocks.

Helpful Hints: Using Muppet Keys, the child must associate colors, and numbers on the monitor to the ones on the keyboard (Muppet Keys).



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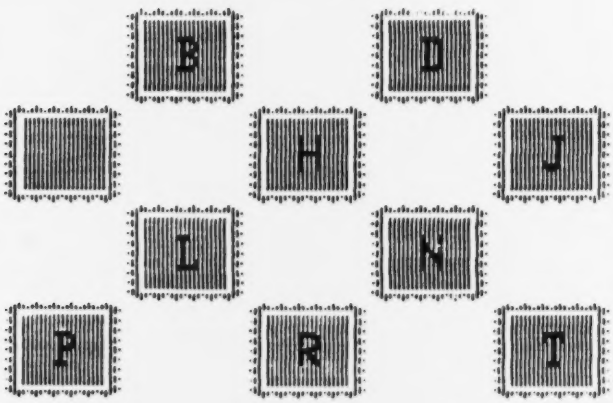
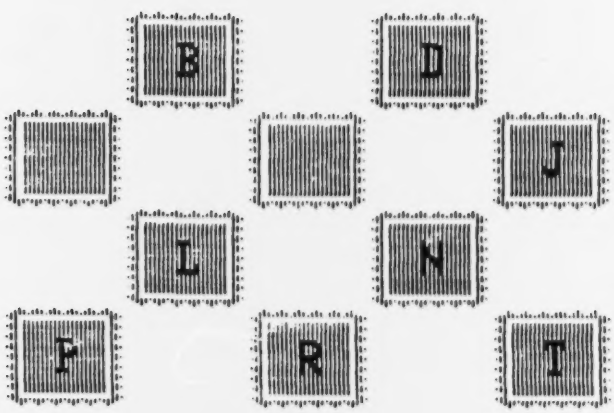
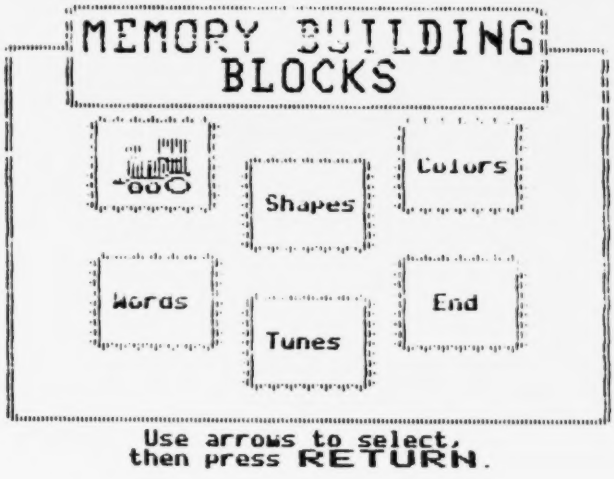
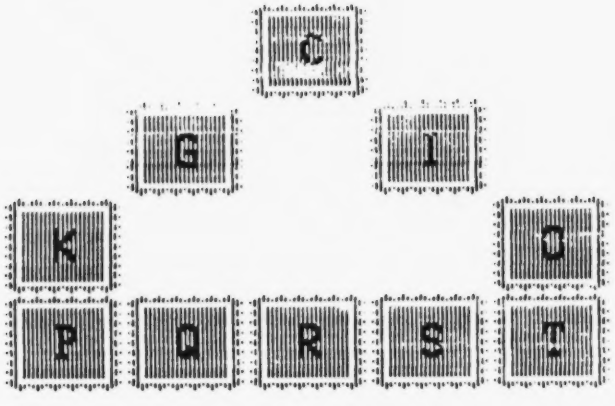


Box F and Box ?



MATCH


MEMORY BUILDING BLOCKS
Shapes
Colors
Words
Tunes
End
Use arrows to select,
then press RETURN.


C
G
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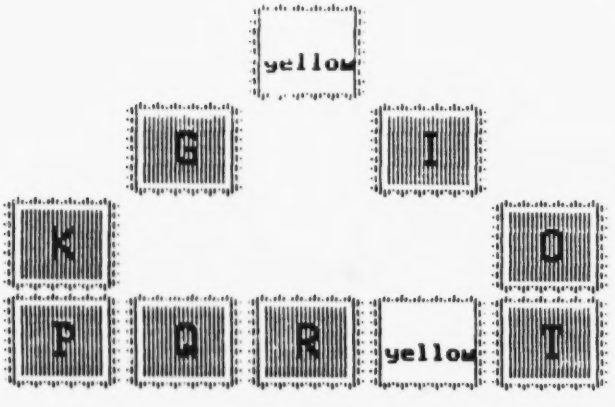
S
T

Box C


yellow
G
I
K
O
P
Q
R
yellow
T

::: MATCH :::

Exceptional Children and Technology

Activity: Use of the computer and picture cards to master upper and lower case letter recognition and building ability to identify initial consonant sounds.

Pilot Site: Student Age/Level of Function/Exceptionality

Age: 6-7 years
Level of Functioning: Grades 1-3
Exceptionality: Learning Disabled

Subject: Reading/Vocabulary

Skill: To increase letter identification, initial consonant recognition, and memory skills

Basic Education Program Correlation: Reading/Literature First Grade 10.2

Software: Muppet Word Book, Sunburst

Hardware: Touch Window and/or Muppet Learning Keys

Plan:

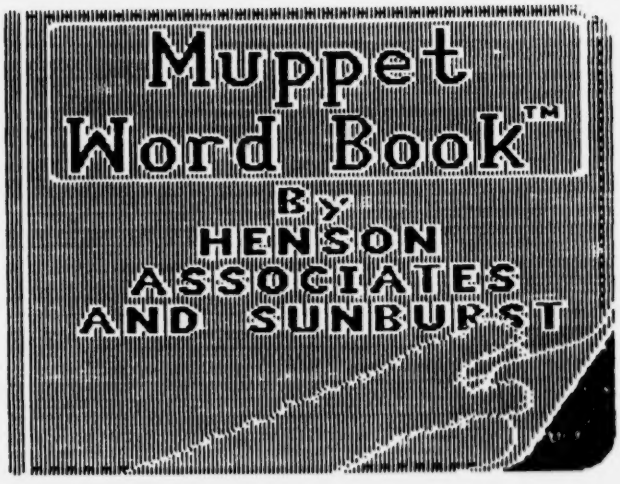
Introduction: Teacher explains activity of matching upper and lower case letters. Students will continue activity by using picture cards to identify initial consonant.

Instruction: Students begin matching upper and lower case letters using the "Elevator" program in Muppet Word Book. Student sees a lower case letter. Then, out of three choices, touches the upper case letter. After practice with this program, the teacher then divides cards evenly among students. Student must find a card with a word that begins with the letter shown on the screen, and raise his hand. Student names the picture. If correct, student presses the upper case letter that matches letter on the screen.

Guided Practice: Teacher monitors student responses on the screen and with the picture cards.

Enrichment/Follow-up: Have the student match upper and lower-case letters on the worksheet. Teacher makes upper-case cards and lower-case word cards and have student play concentration with the letter cards.

Helpful Hints:



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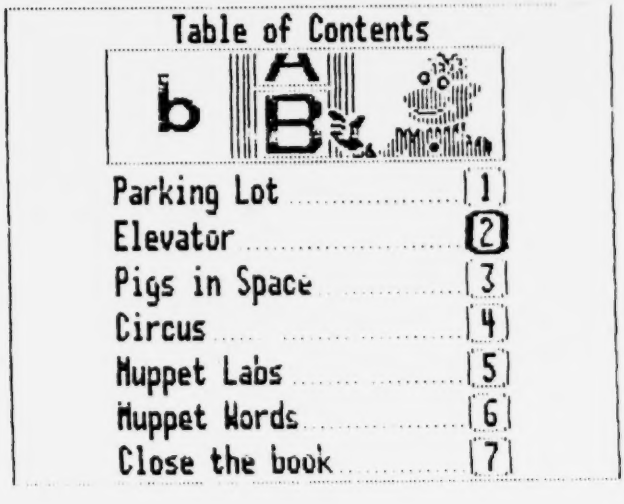
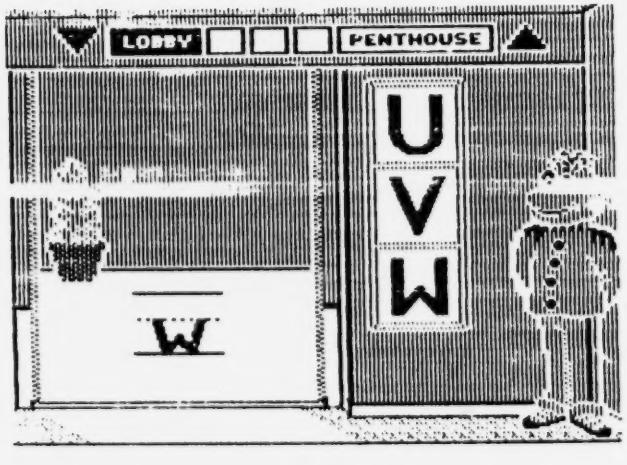
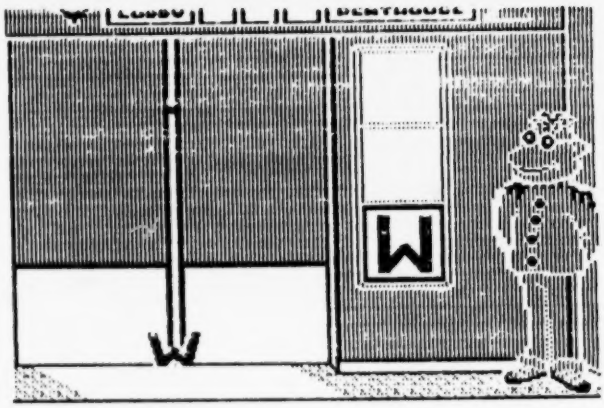
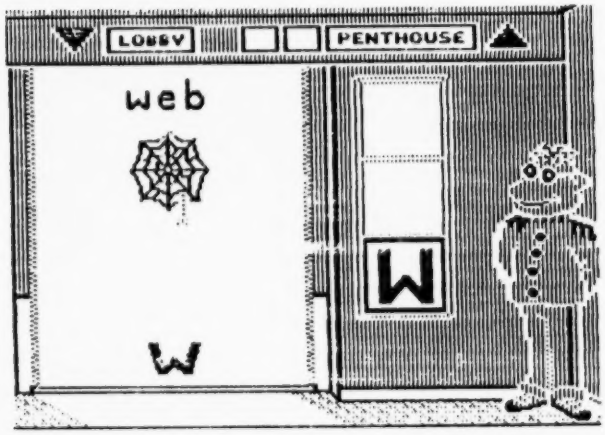
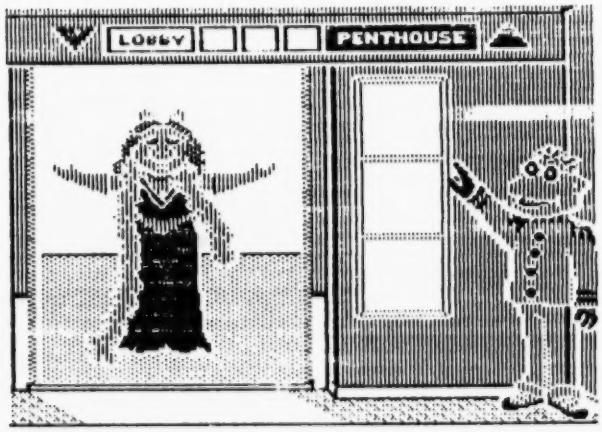





W
W


LOBBY
PENTHOUSE
web
W
W


LOBBY
PENTHOUSE

Exceptional Children and Technology

Activity: Use of the computer to reinforce recognition of learned words.

Pilot Site: Student Age/Level of Function/Exceptionality

Age: 6-10 years old
Level of Functioning: 1-3 grades
Exceptionality: LD/EMH Resource Students

Subject: Reading/vocabulary

Skill: To increase word recognition

Basic Education Program Correlation: First grade - Reading/Literature 10.1

Software: Memory Building Blocks, Sunburst

Hardware: Touch Window

Preparation

Plan:

Introduction: Teacher explains activity of matching words to each other. Teacher will read the directions and will tell student the words have been selected from his word list.

Instruction: The student begins by touching a letter for a word and then touching another to match it using "Words" program. The student orally reads each word he picks. If he has a match, he continues. If not, the next student begins.

Guided Practice: Teacher monitors student responses on the screen and oral responses.

Enrichment/Follow-up: Have student create a story using word processing (Kid Writer). Have student create a word book using correctly paired words. Student can write each correct pair on a chart to hang in the classroom.

Helpful Hints:
Teacher chooses "Edit Word File" in the change options menu. Teacher programs the selected words onto disk.

Activity: Use of the computer to write words and create a word booklet.

Recommended Student Age/Level of Function/Exceptionality

Age: 6-10 years
Level of Functioning: grades 1-3
Exceptionality: LD/EMH Resource Students]

Subject: Reading/Writing/Vocabulary

Skill: To increase word recognition through reinforcement

Basic Education Program Correlation: First Grade - Reading 10.1

Software: Muppet Word Book, Sunburst

Hardware: Muppet Learning Keys, printer

Plan:

Introduction: Teacher explains activity of making a book by writing words on the computer which student has mastered from a selected list.

Instruction: The student will make a cover sheet with the title and his name. Then he will write the words to be printed. The words are written in sets of four, the printer will print these. The student will cut out the title page and the word pages to make it into a booklet.

Guided Practice: Teacher will monitor student's written responses on the screen as each new word is added.

Enrichment/Follow-up: Have student illustrate book and read to teacher/peer.

1. Have students display books in media center.
2. Have students exchange books.

Helpful Hints:

Activity: Use of the computer to develop discrimination of vowel sounds and to recognize letter combinations associated with each vowel sound.

Pilot Site: Student Age/Level of Function/Exceptionality:

Age: 7 and above
Level of Functioning: First grade and above
Exceptionality: Learning Disabled Educable Mentally Handicapped

Subject: Reading

Skill: to develop phonics skills with vowel sound recognition

Basic Education Program Correlation: Reading 10.4, First Grade

Software: Sound Ideas.Vowels, Houghton-Mifflin

Hardware: Echo II+ speech synthesizer

Plan:

Introduction: The teacher presents the vowel and its sound which the student will identify. The teacher will identify the keys used to operate the program.

Instruction: The student will listen to the instructions given via Echo II. The student will match pictures and words which have the target vowel sound.

Guided Practice: Teacher monitors students' responses on the screen when matching pictures/words with the target vowel sound. The student will continue the activity in the student activity book.

Enrichment/Follow-up: The students may look at objects or pictures and identify the short/long vowel sound which is represented. Students could make vowel booklets for each vowel sound.

Helpful Hints: Teacher should be familiar with the keys required to operate the program. Teacher may implement the supplemental activities found in the program booklet.

Activity: Simple mathematics addition

Pilot Site: Student Age/Level of Function/Exceptionality:

Age: 6 and above
Level of Functioning: First grade and up
Exceptionality: LD EMH TMH B/EH

Subject: Mathematics

Skill: To teach or reinforce quick recall of simple addition facts.

Basic Education Program Correlation: Mathematics 2.1, Find sums of twenty.

Software: Speedway Math, MECC

Hardware: Printer, optional

Plan:

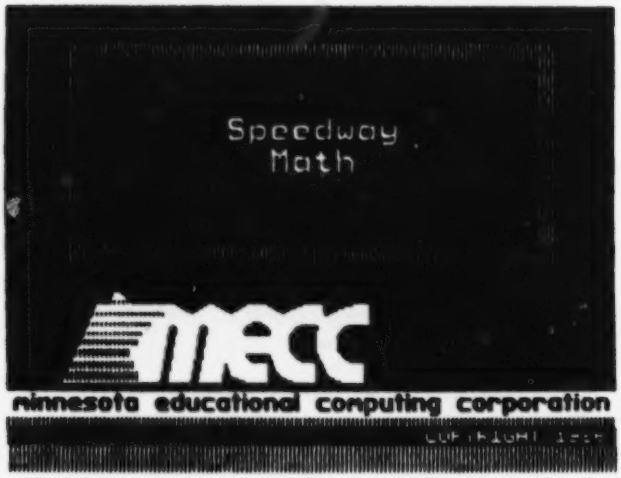
Introduction: Teacher explains the process of addition and reads directions from disk.

Instruction: The student begins by adding the addition problem shown on the monitor. The student then programs the answer and another addition problem is given. This process is repeated until ten problems are answered. At the end of the lap(or ten problems) the score is displayed showing the number of correct and incorrect responses. Also, the speed is given according to the time used to solve the ten problems.

Guided Practice: Teacher guides student through problem solving strategies.

Enrichment/Follow-up: Students compete by comparing the rate of speed with prior practice lap speeds or by comparing with peer lap speeds.

Helpful Hints: With the use of a printer, a record of students scores can be printed to show progress or used for teacher reference.



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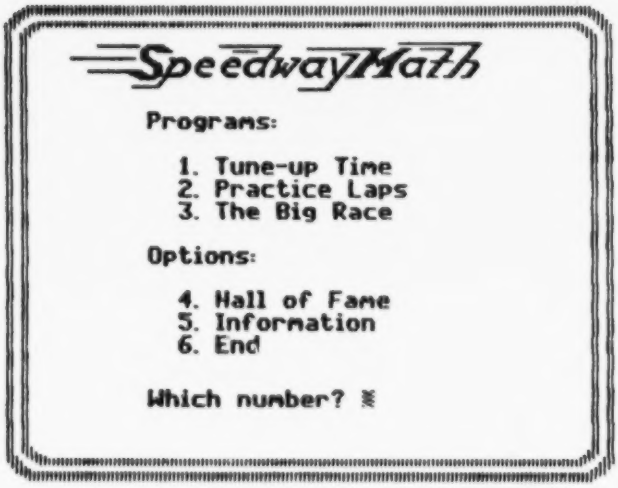
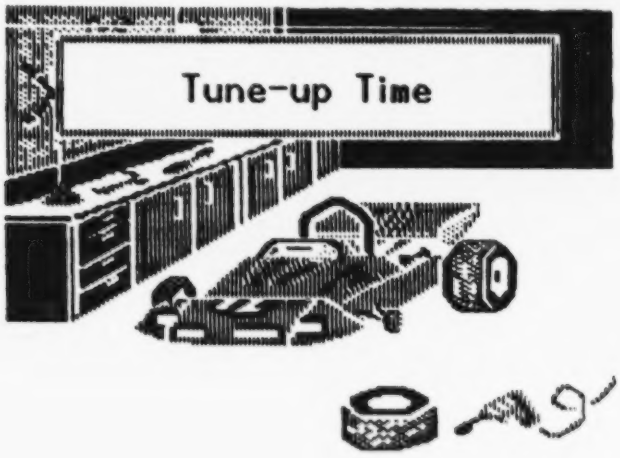
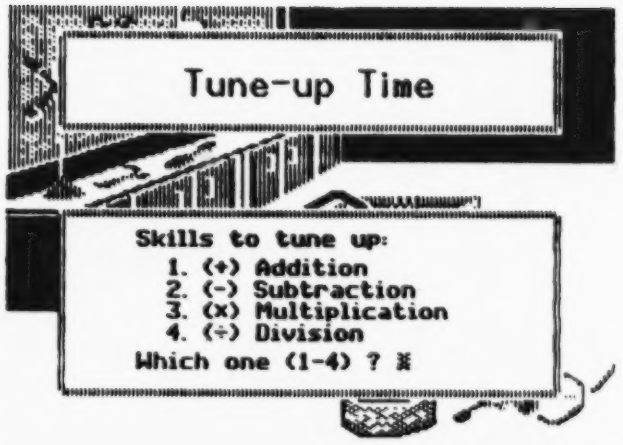
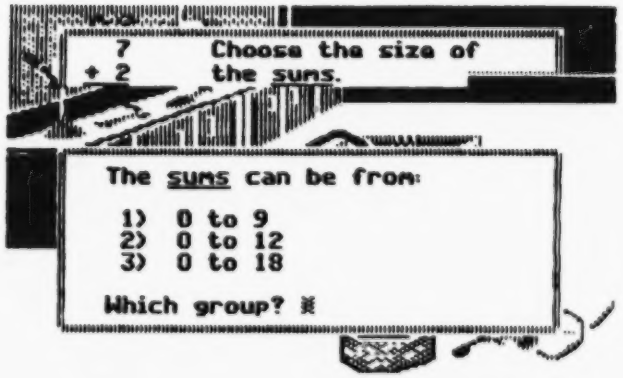



Tune-up Time


Tune-up Time
Skills to tune up:
1. (+) Addition
2. (-) Subtraction
3. (x) Multiplication
4. (÷) Division
Which one (1-4) ?

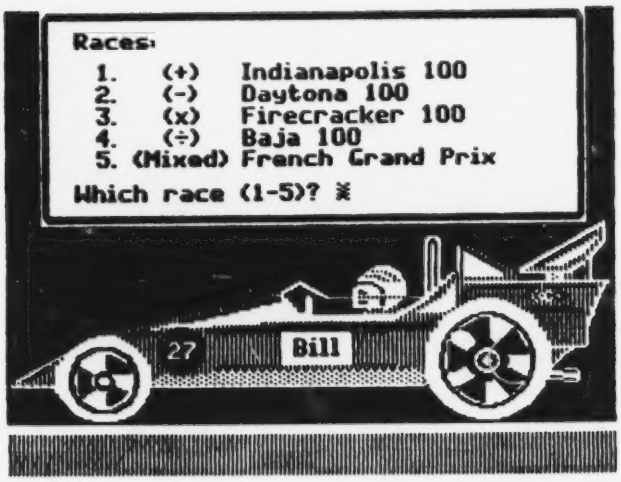

7
+ 2
Choose the size of
the sums.
The sums can be from:
1) 0 to 9
2) 0 to 12
3) 0 to 18
Which group?

The Big Race

What is your
last name? Jones

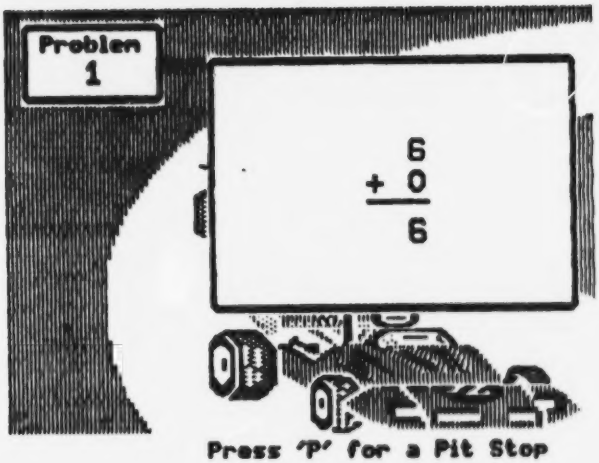
What is your
first name? Bill

What number (1-99) would you like
to use on your race car? 27



Welcome to the
Indianapolis 100
Today's race has 100 addition facts. A pit stop adds 5 seconds to your time. Good luck!
27
Bill

Press SPACE BAR to continue


Problem
1
6
+ 0
6
Press 'P' for a Pit Stop

Nice race, Bill!
Your name has been added to the Hall of Fame!
2:46
27
Bill

Exceptional Children and Technology

Activity: Use of computer to test knowledge of subject area covered inclassroom discussion.

Pilot Site: Student Age/Level of Function/Exceptionality

Age: 12 - 18
Level of Functioning: K - 3
Exceptionality: TMH

Subject: Survival Skills: Tool Knowledge

Skill: To select from multiple choice correct answers about tool usage.

Correlation: Safety/First Aid Grade 1, 1
Reading/Literature K, 7; Grade 1.7

Software: CAPTAIN: Cognitive Training System: Conceptual Skills: Pattern in Display, Cognitive Training Systems

Hardware: ECHO (OPTIONAL), Printer (optional): for teacher use of obtaining hard copy of test, and test results.)

Plan:

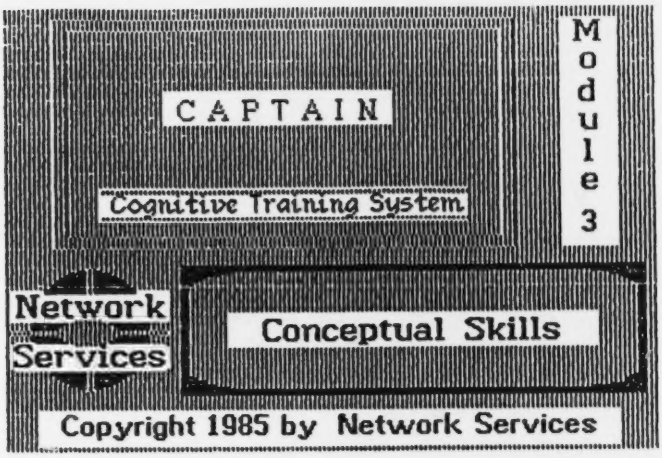
Introduction: Teacher explains that students will be taking a test to see how much they remember about the tools they have studied. They will not have to read the test themselves.

Instruction: The teacher will load the test, and explain to the students that the speech synthesizer will read the test to them. The answers will "light up". When the right answer is high lighted, the student will press return.

Guided Practice: The teacher will talk the students through the first question to be sure they understand the sequence of actions used to answer.

Enrichment/Follow-up: Different test formats may be used to assure knowledge of subject matter and keep student interest high.

Helpful Hints: Students who read will find it more challenging to take the test without use of the ECHO. They will enjoy this format of test taking.



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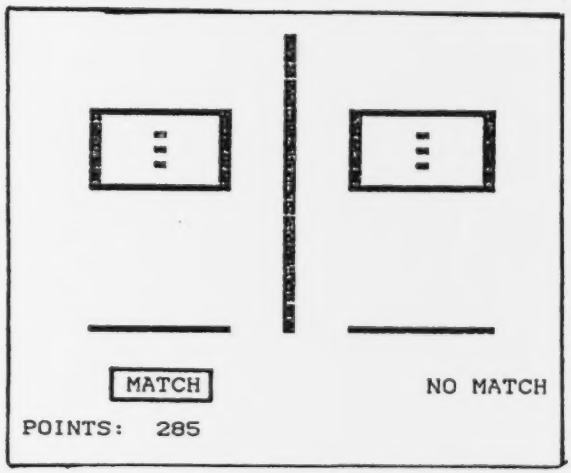
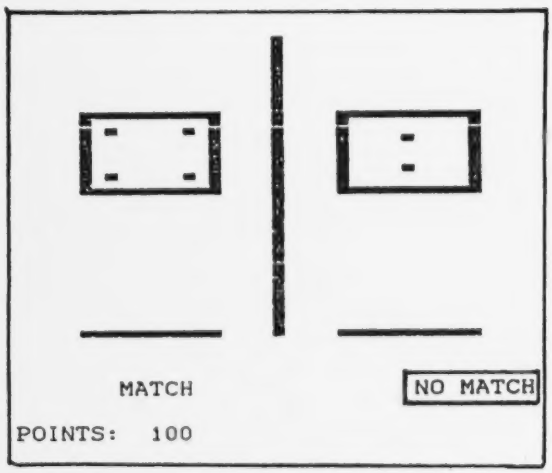
```
NUMERIC DISPLAY MATCH

    MOVE THE MOUSE TO SELECT AND
    CLICK THE MOUSE TO CHOOSE

         PREVIOUS MENU

         BEGIN TASK

         TASK INSTRUCTIONS

         BEGINNER

         CONTINUOUS DISPLAY

         1 MINUTE

         ASSESSMENT
```






```
SCORE MENU

    MOVE THE MOUSE TO SELECT AND
    CLICK THE MOUSE TO CHOOSE


         PREVIOUS MENU

         PRINT SCORES

         RECORD SCORES

         PRINT AND RECORD SCORES
```

```
++++++++++++++++++++++++++++++++++++++++

TASK:  NUMERIC DISPLAY MATCH
NAME:  JOAN
DATE:  02/08/88

----------------------------------------

INCORRECT CHOICES:  2    8.7%
NON-RESPONSE ERRORS:  0
AVERAGE REACTION TIME:  1.3 SECONDS
POINTS:  1084

----------------------------------------

DIFFICULTY:  BEGINNER
DISPLAY TIME:  CONTINUOUS DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++

CLICK THE MOUSE TO CONTINUE...
```

Exceptional Children and Technology

Activity: Use of computer to train students in cognitive skills.

Pilot Site: Student Age/Level of Function/Exceptionality
Age: 18 and 19
Level of Functioning: First and second grade
Exceptionality: TMH

Subject: Numerical Skills

Skill: To view similarities in number value of object
To increase eye-hand coordination
To increase motor planning

Correlation: Mathematics/numeration K, 1
Mathematics/numeration Grade 1, 1
Mathematics/whole numbers K, 2
Mathematics/whole numbers Grade 1, 2

Software: CAPTAIN: Cognitive Training System: Conceptual Skills: Pattern in Display, Cognitive

Hardware: Mouse (or Trackball), printer

Plan:

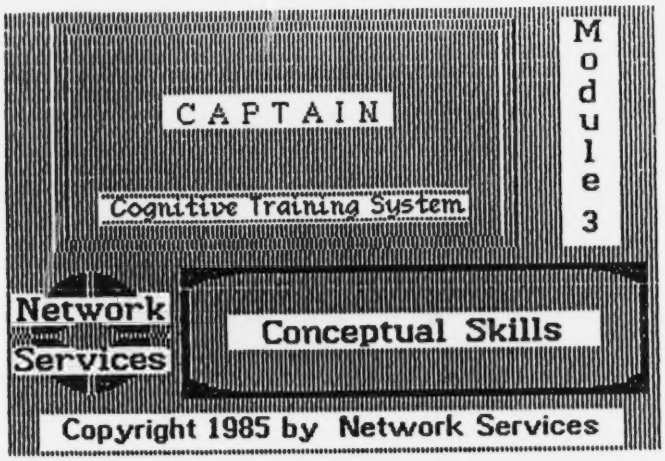
Introduction: Teacher explains that students will play a game to see if two boxes have the same number of squares in them. Scores will be printed of how well they do.

Instruction: The students will see two boxes on the screen divided by a line. The boxes will have squares in them. The students count the squares to see how many are in each. Under one box it says MATCH, under the other it says NO MATCH. The students must move the mouse to highlight the correct answer, then click to record their choice.

Guided Practice: The teacher may allow the students to watch a demonstration of a practice game. Some students will need even more guidance than this since the task involves more than just knowing the correct answer, but motor planning and sequence of motor activities.

Enrichment/Follow-up: For students who have difficulty with the chain of events that must occur, the teacher may want to simulate this activity in a one-to-one setting without the computer first.

Helpful Hints: A log may be kept daily to note student progress. This program allows the teacher to set many options such as display time, difficulty, level, right or left hand usage. This program has three disks with a total of 21 activities for training.




```
NUMERIC DISPLAY MATCH

   MOVE THE MOUSE TO SELECT AND
   CLICK THE MOUSE TO CHOOSE

        PREVIOUS MENU

        BEGIN TASK

        TASK INSTRUCTIONS

        BEGINNER

        CONTINUOUS DISPLAY

        1 MINUTE

        ASSESSMENT
```

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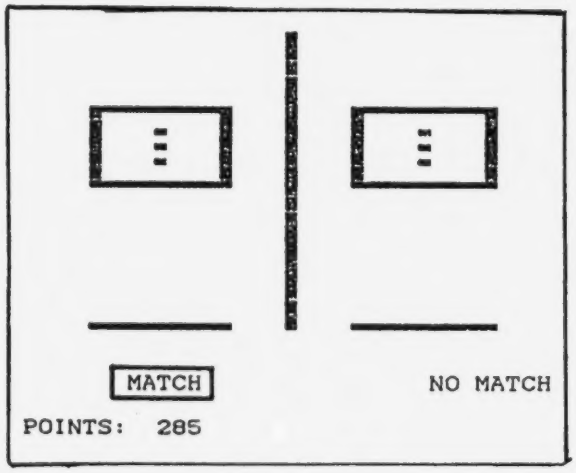

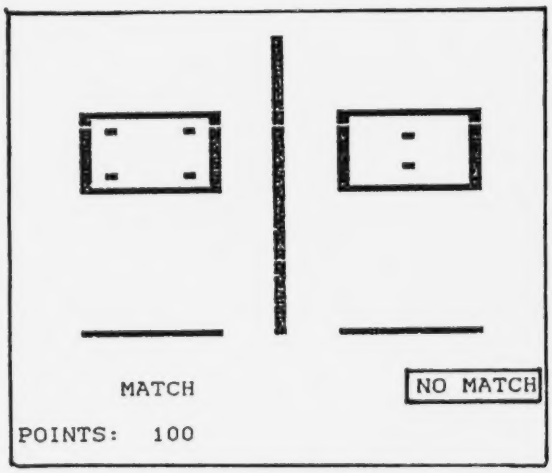


```
SCORE MENU

   MOVE THE MOUSE TO SELECT AND
   CLICK THE MOUSE TO CHOOSE


        PREVIOUS MENU

        PRINT SCORES

        RECORD SCORES

        PRINT AND RECORD SCORES
```

```
++++++++++++++++++++++++++++++++++++++++

TASK:  NUMERIC DISPLAY MATCH
NAME:  JOAN
DATE:  02/08/88

----------------------------------------

INCORRECT CHOICES:  2    8.7%
NON-RESPONSE ERRORS:  0
AVERAGE REACTION TIME:  1.3 SECONDS
POINTS:  1084

----------------------------------------

DIFFICULTY:  BEGINNER
DISPLAY TIME:  CONTINUOUS DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++

CLICK THE MOUSE TO CONTINUE...
```

```
++++++++++++++++++++++++++++++++++++++++

TASK:  NUMERIC DISPLAY MATCH
NAME:  Douglas
DATE:  12/02/87

----------------------------------------

INCORRECT CHOICES:  1    5.6%
NON-RESPONSE ERRORS:  0
AVERAGE REACTION TIME:  2.0 SECONDS
POINTS:  878

----------------------------------------

DIFFICULTY:  BEGINNER
DISPLAY TIME:  5 SECOND DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++


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TASK:  NUMERIC DISPLAY MATCH
NAME:  Douglas
DATE:  12/02/87

----------------------------------------

INCORRECT CHOICES:  1    4.8%
NON-RESPONSE ERRORS:  0
AVERAGE REACTION TIME:  1.6 SECONDS
POINTS:  1039

----------------------------------------

DIFFICULTY:  BEGINNER
DISPLAY TIME:  5 SECOND DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++

0


QUESTIONS ANSWERED = 5
NUMBER RIGHT = 5
NUMBER WRONG = 0
PERCENT CORRECT = 100%
 0


QUESTIONS ANSWERED = 5
NUMBER RIGHT = 5
NUMBER WRONG = 0
PERCENT CORRECT = 100%
```

```
DIFFICULTY:  BEGINNER
DISPLAY TIME:  CONTINUOUS DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++


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TASK:  NUMERIC DISPLAY MATCH
NAME:  Tim
DATE:  11/10/87

----------------------------------------

INCORRECT CHOICES:  0      .0%
NON-RESPONSE ERRORS:  0
AVERAGE REACTION TIME:  2.5 SECONDS
POINTS:  831

----------------------------------------

DIFFICULTY:  BEGINNER
DISPLAY TIME:  CONTINUOUS DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++


++++++++++++++++++++++++++++++++++++++++

TASK:  NUMERIC DISPLAY MATCH
NAME:  Tim
DATE:  11/10/87

----------------------------------------

INCORRECT CHOICES:  2    11.8%
NON-RESPONSE ERRORS:  0
AVERAGE REACTION TIME:  2.4 SECONDS
POINTS:  770

----------------------------------------

DIFFICULTY:  BEGINNER
DISPLAY TIME:  CONTINUOUS DISPLAY
TIME:  1 MINUTE
MODE:  ASSESSMENT

++++++++++++++++++++++++++++++++++++++++
```

Exceptional Children and Technology

Activity: Use of computer to create your own story by selecting and combining story parts.

Pilot Site: Student Age/Level of Function/Exceptionality
Age: 6 and above
Level of Functioning: First grade and up
Exceptionality: B/EH, EMH

Subject: Reading and Writing

Skill: To increase word recognition
To create short stories
To read short stories

Correlation: Communication Skills K, 5.1; K, 7.1; K, 8.1
Comunication Skills/writing Grade 1, 5.1; Grade 1, 7.1; Grade 1, 8.1

Software: Story Mix 1 - "Ivar" and Story Mix 2 - "At the Zoo", Bertamax (Tarmac)

Hardware: Echo II Speech Synthesizer (optional)

Plan:

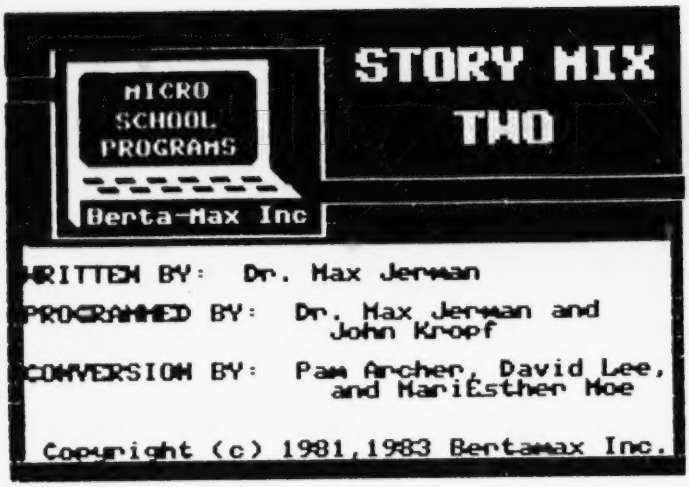
Introduction: Teacher explains that students will make their own stories by selecting story parts in the following categories: who was, what, when, and where.

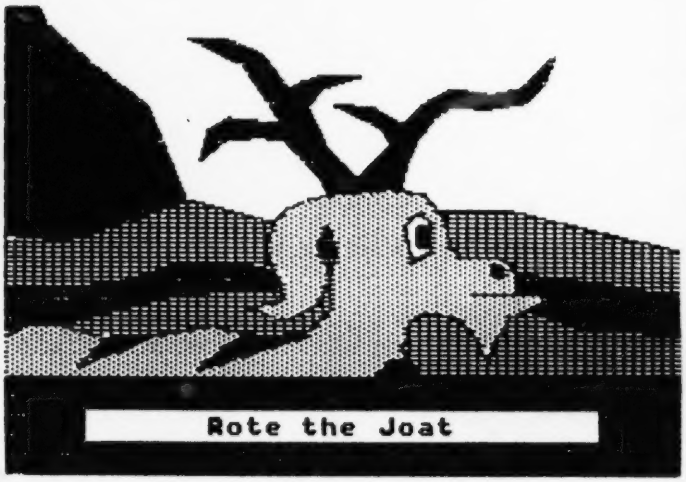
Instruction: In each category mentioned above, students will press the arrow keys and return to select a story part from four choices to create their story. After the story is created, the students can read their story.

Guided Practice: The teacher or the Echo II speech synthesizer may read the choices to the students.

Enrichment/Follow-up: The teacher can make flash cards of the story choices. Students may write their story on paper after creating it on the computer (since you can not print it.)

Helpful Hints: Make a laminated poster of the story parts and choices. As students select story parts, use an overhead marker to mark their choices because students sometimes forget what they chose on previous selections. When the student is finished, wipe off the poster for use with another student.





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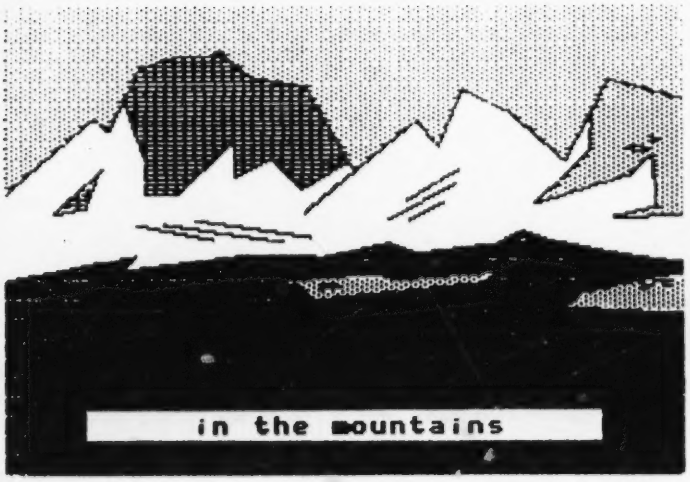
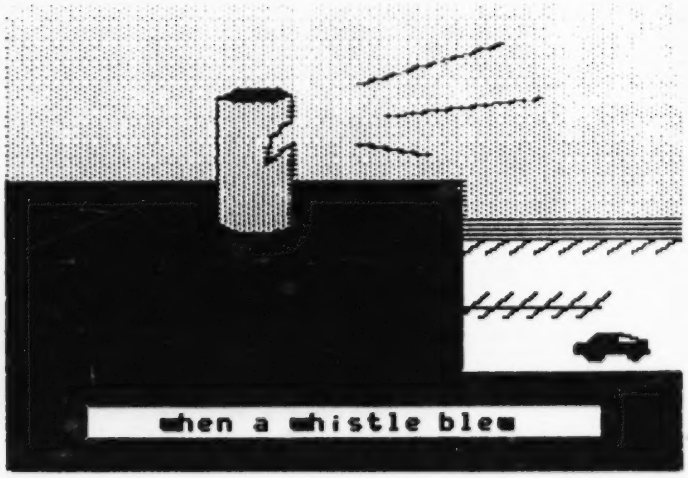




Activity: Use of computer to create a picture using objects a from pre-stored library and write their own story.

Pilot Site: Student Age/Level of Function/Exceptionality

Age: 6 and above
Level of Functioning: First grade and up
Exceptionality: TMH, EMH, SLD

Subject: Reading and Writing

Skill: To use for language experience
To create a story orally from pictures they create

Correlation:

Communication Skills K, 5.1; K, 7.1; K, 8.1
Comunication Skills/writing Grade 1, 5.1; Grade 1, 7.1; Grade 1, 8.1

Software: KIDWRITER, Spinnaker

Hardware: printer

Plan:

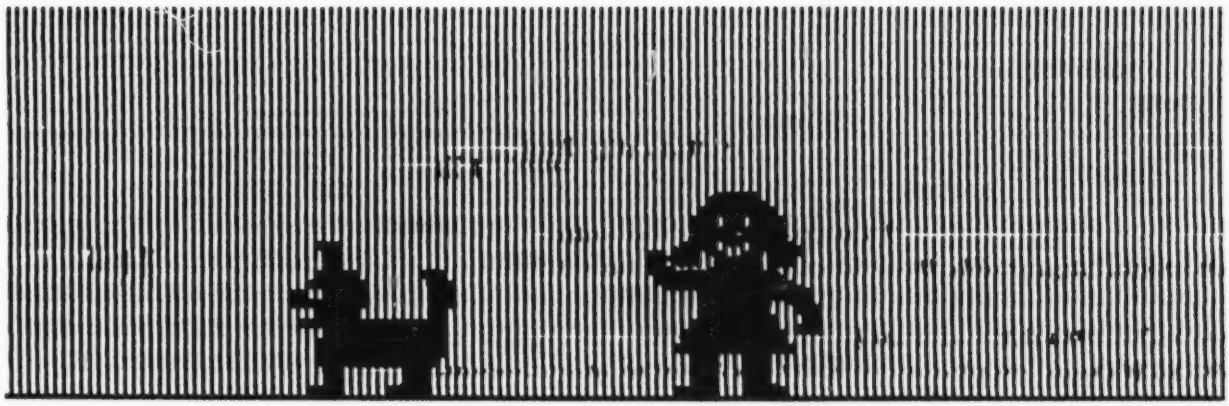
Introduction: Teacher explains that students will create a picture and orally create a story as the teacher types the story. Students may print a picture story to keep.

Instruction: The teacher will show students how to select the background and pictures to be placed in their picture. The color and size of the object may be selected.

Guided Practice: The teacher helps students learn commands to create the picture and story. The teacher makes sure students use all picture objects in their story.

Enrichment/Follow-up: Students need to preplan their picture and story text before using the computer. It is easy to put too many objects in the picture and not have enough room to describe it.

Helpful Hints: This program is designed for students to write thier own stories, however, many exceptional children can tell a story and not be able to spell the words. We used it for language experience with the teacher typing the story. After reviewing their printed story several times, they were then able to read their story.



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MICHELLE CHASED SNEAKER TOWARD THE TREES. WHERE WOULD THEIR ADVENTURE END?

Exceptional Children and Technology

Activity: Letter recognition and spelling.

Pilot Site: Student Age/Level of Function/Exceptionality
Age: Grades 1-3
Level of Functioning: Grade 1
Exceptionality: EMH

Subject: Reading/Literature
Spelling

Skill: Letter recognition and spelling

Correlation: 10.2 Recognize letters of the alphabet
Spell appropriate vocabulary

Software: Talking Textwriter

Hardware: Echo Speech synthesizer (optional)
Printer (optional)

Plan: To spell vocabulary words using the microcomputer.

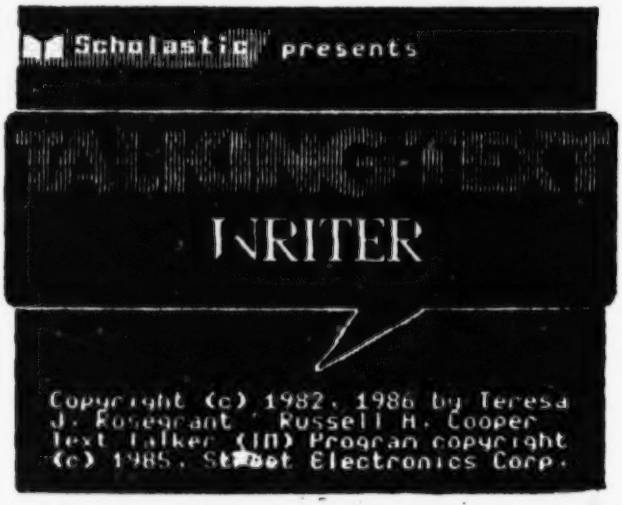
Introduction: Students are given the week's vocabulary on a worksheet.

Instruction: Small groups of students can practice spelling words by using Talking Textwriter. The Echo Speech Synthesizer pronounces words typed into the computer, to check for correct spelling. The group can also make up sentences using their spelling. words.

Guided Practice: Students type in spelling words. The computer provides verbal feedback, pronouncing the word correctly if spelled right.

Enrichment/Follow-up: Students make up sentences and stories using the spelling words. They print the stories and illustrate them.

Helpful Hints: Teacher will best know how much assistance to provide students.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This disk has 112 unused blocks left.

File #	File Name	
1	Mary	(20-column)
2	Twinkle	(20-column)
3	Whoopie	(40-column)
4	Spangled	(40-column)
5	Casey	(80-column)
6	Jabberwocky	(80-column)
7	Goats	(20-column)
8	Hen	(40-column)
9	Jack Part I	(40-column)
10	Jack Part II	(40-column)

G)et file N)ew file C)opy file

Large Slow Double Letters Typeover

Mary (20-column) Page 1

Mary's Lamb
by Sarah Josepha Hale

Mary had a little lamb,
Its fleece was white as snow,

~E)rase line ~R)ecover line ~S)plit line

Normal Normal Double Words Typeover

Hen (40-column) Page 1

The Little Red Hen

Once upon a time there was a little red hen who shared her tiny cottage with a goose, a cat, and a dog.

The goose was a gossip. She chatted with the neighbors all day long.

The cat was very vain. She brushed her fur, straightened her whiskers, and polished her claws all day long.

The dog was always sleepy. He napped on the front porch swing all day long.

~E)rase line ~R)ecover line ~S)plit line

SPELLING

pen I write with a pen.

ten I have ten cards.

hen

big The boy was big.

he He was writing.

blue

Michelle

Digita

Julia

Chris

Shaunda

Travis

Activity: Using the computer to assist word recognition and meaning.

Pilot Site: Student Age/Level of Function/Exceptionality:

Age: Grades 1-3
Level of Functioning: Grade 2
Exceptionality: EMH

Subject: Reading/Literature
Science/Social Studies

Skill: Word Recognition

Correlation: Reading/Literature 11.1
Recognize, pronounce, and use high frequency words in context.
Recognize terms used in context.

Software: Talking Textwriter

Hardware: Echo Speech synthesizer (optional)
Printer (optional)

Plan: To design study aids related to classroom curriculum.

Introduction: Students take part in classroom discussion on various science or social studies topics. Important facts are highlighted.

Instruction: Simple study guides can be developed on the computer using Talking Textwriter. The Echo Speech Synthesizer can read the information back to the students to reinforce concepts studied in science or social studies. The information can be printed and reproduced for the students.

Guided Practice: Students may work individually on the computer, having study information read back to them by the Echo.

Enrichment/Follow-up: Information on the study guide will be used in assessment of students' retention of the material.

Helpful Hints: The teacher will best know how to word and organize study information so that is most easily understood by students.

Unit 8

bell me

sell my

tell

well

Listen to me.

Please tell me

your name.

Do you feel well?

He will sell his house.

Please ring the bell.

It is my ball.

Exceptional Children and Technology

Activity: Using the computer to enhance writing and reading of stories.

Pilot Site: Student Age/Level of Function/Exceptionality
Age: Grades 1-3
Level of Functioning: Grade 1
Exceptionality: EMH

Subject: Reading/Literature

Skill: Writing and reading

Correlation: 4.1 Reading/Literature. Contribute to a group story
4.2 Reading/Literature. "Read" own contribution to a group story
4.3 Reading/Literature. Recognize some sentences or words in a group story/chart

Software: Talking Textwriter

Hardware: Echo Speech synthesizer (optional)
Printer (optional)

Plan: To use composition, reasoning and sequencing skills in developing a group story.

Introduction: A small group of students (10 or less) gather around the computer. The teacher presents an idea or question such as "Lets make up a story about..."

Instruction: Students then contribute to the story as the teacher types in their ideas using Talking Textwriter. The Echo board will read the story back to the students, while they form new ideas. The completed story can then be printed and the students can illustrate it.

Guided Practice: Students provide sentences about a selected topic. After the story is completed and printed, students select vocabulary for study.

Enrichment/Follow-up: Library books can be used to further explain story topics. The story may become part of a unit of study.

Helpful Hints: The story can also be used to build vocabulary using a language experience approach.

Lynnette is my friend. She likes to run. You can be my friend too.

by Julie

Exceptional Children and Technology

Activity: Using the computer to motivate and enhance student writing.

Pilot Site: Student Age/Level of Function/Exceptionality
Age: Grades 1-3
Level of Functioning: Grade 1
Exceptionality: EMH

Subject: Writing

Skill: Composing, writing, and editing

Correlation: 5.2 Writing. Record personal experiences and events
5.2 Writing. Revise selected pieces of information to enhance meaning
5.2 Writing. Edit selected pieces of own writing for capitals, periods, and spelling

Software: Talking Textwriter

Hardware: Echo Speech synthesizer (optional)
Printer (optional)

Plan: To compose sentences and use the microcomputer in word processing

Introduction: Students begin basic word processing by first writing their own sentences in notebooks and with teacher help, editing those sentences.

Instruction: As students become familiar with the microcomputer, individuals type in the sentences they have written, using copying skills.

Guided Practice: After practice with this activitiy, students are then asked to make up sentences and type them directly into the ocmputer without first writing them down. Printing these stories is a real motivator !

Enrichment/Follow-up: Students use vocabulary in their own stories for instruction in other areas.

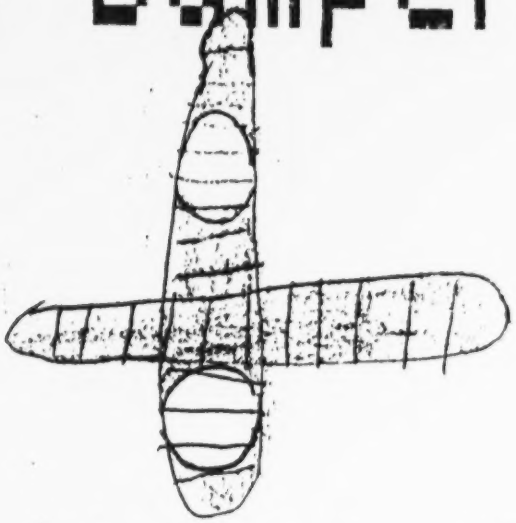
Helpful Hints: Information can be saved on a disk and shared between classrooms.

I liked the fair.

I rode on the airplane. I went to the circus.

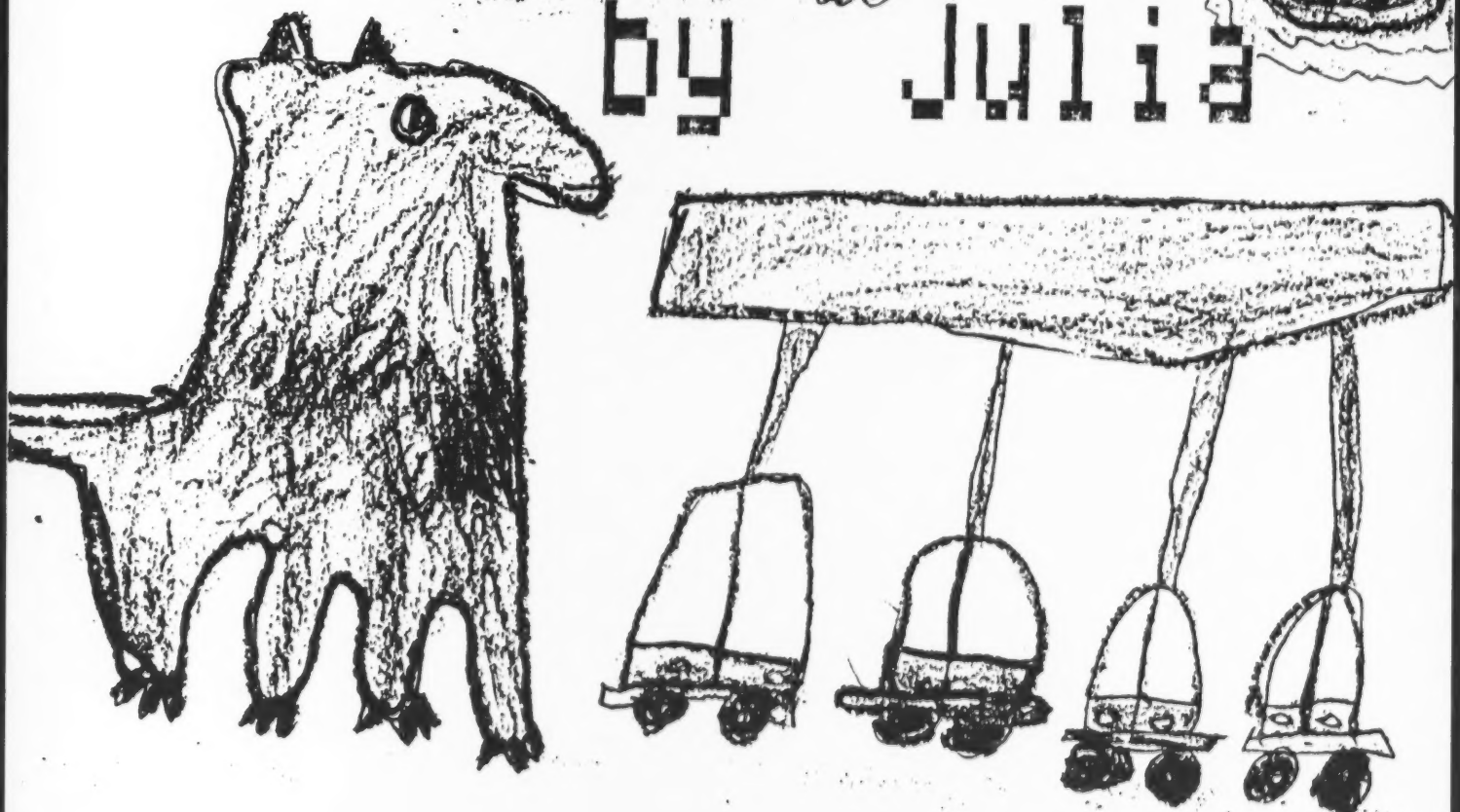
I saw two dragons.

I saw two bumper cars .



I saw a rabbit.

by Julia



SAMPLE LESSON PLAN

Exceptional Children and Technology

Activity:

Pilot Site: Student Age/Level of Function/Exceptionality:

Subject:

Skill(s):

Basic Education Program Correlation:

Software:

Hardware:

Plan:

Introduction:

Instruction:

Guided Practice:

Enrichment/Follow-up:

Helpful Hints:

SUGGESTED MANAGEMENT FORMAT

Computer Log

Teacher: _____
Assistants: _____
Date: _____

Student(s):_____
Class: _____
Grade: _____

Software Title:

Peripheral Used:

Skill taught by software:

IEP/BEP Objective:

Description of Instructional Activity:

Follow-Up:

Student Reaction:

Computer Log

Teacher: _____
Assistants: _____
Date: _____

Student(s):_____
Class: _____
Grade: _____

Software Title:

Peripheral Used:

Skill taught by software:

IEP/BEP Objective:

Description of Instructional Activity:

Follow-Up:

Student Reaction:

Computer Log

Sample Entry

Teacher: Jones
Assistants: Wells/McFarlane
Date: Anytime, 1987

Student(s): Robert Winston
Class: _____
Grade: _____

Software Title: Paint with Words

Peripheral Used: Printer

Skill taught by software: To increase word recognition through reinforcment.

IEP/BEP Objective: To increase word recognition.

Description of Instructional Activity:

The student was allowed to select a word group and background of interest. They "painted" the picture using their own creativity with placement of words. They printed their picture.

Follow-up: We made flash cards from the word group that each student chose. Each student was also asked to create a story from the picture that they "painted."**

Student Reaction: Robert needed a lot of encouragement to use his imagination. He chose only to describe what and where everything was. Robert needs repetition of word list daily.

**A folder is being kept on each student containing pictures and word lists and a daily log recording the individual progress of each student.

SELECTED SOFTWARE LISTING

EXCEPTIONAL CHILDREN AND NEW TECHNOLOGY

SELECTED SOFTWARE LISTING

Software	Vendor	Price	Function	Area
Muppet Word Book[1]	Sunburst	$59.00 1422-GR	Data Entry Alternative	Reading Readiness
Type to Learn[1]	Sunburst	$69.00 1490-GR	Data Entry	Keyboarding
Magic Slate[2]	Sunburst	$99.95 1133-GR	Visual/ Touch	Writing
Talking Text Writer[2]	Sunburst	$149.95	Sound	Writing Readiness
Talking Writer[2]	Cross	$24.95	Sound Visual	Writing
Print Shop2	Broderbund	$49.95	Visual	Reading Composition
Kid Writer[2]	Spinnaker	$34.95	Visual	Writing
Sticky Bear[2]	Optimum	$39.95	Visual	Writing
Printer Numbers	Optimum	$39.95	Visual	Mathematics
ProWORDS[2]	Access Unlimited	$195.00	Visual	Writing
Early Childhd Readiness Order/Sequencing	Aquarius	$115.00 $29.95ea		Reading Readiness
Sound Ideas[3] Vowels(5 disks) Consonants	Houghton	$156.00	Sound Echo	Structural Analysis
Hint and Hunt[3]	DLM	$99.00 L5300P	Sound Echo II	Structural Analysis

Verb Viper[3]	DLM L2100P	$46.00 Echo II	Sound Analysis	Structural
Construct a Word I[3]	DLM	$99.00 L5500P	Sound Echo II	Structural Analysis
Syllasearch I[3]	DLM	$99.00 L4500P	Sound Echo	Structural Analysis
Memory Building Blocks[4]	Sunburst	$59.00 1534-GK	Touch Window	Reading Readiness
Simon Says[4]	Sunburst	$59.00 1625-GK	Touch Window	Reading Readiness
Odd-One-Out[4]	Sunburst	$59.00 1076-GK	Touch Window	Reading Readiness
Comic Strip Maker[1] (School Edition)	Disney	$39.95		Reading Readiness
Paint With Words[2]	MECC	$49.00 A158-501	Sound	Reading Readiness
Brainz Builder One	Banium- Dunbar	$95.00	Sound	All
Speedway Math	MECC A169-501	$49.00		Mathematics
Captain	Cognitive Training System	$200.00		Cognitive
Story Mix,I,II	Bertamax	$34.80 each		Reading

Code
1= Data Entry
2=Word Processing
3=Sound
4=Touch
5=Authoring System

Vendors Addresses

Access Unlimited, Speech Enterprises
10622 Fairlane Drive
Houston, Texas 77024
(713) 461-1666

Aquarius
P.O. Box 128
Indian Rock Beach, Florida 33535
(813)-595-7890

Banium-Dunbar
6427 Hillcrost
Houston, Texas 77081
(703) 988-0887

BertaMax
3647 Stoneway North
Seattle, Washington 98103
(206) 547-4056

Broderbund
17 Paul Drive
San Rafael, California 94903-2101
(415) 492-3200

Cross Educational Software
1802 N. Trenton Street
Ruston, Louisiana 71270
(318) 255-8921

Cognitive Training Systems
Network Services
1915 Hugeunot Road
Richmond, Virginia 23235
(804) 379-2253

DLM Teaching Resources
P.O. Box 4000
One DLM Park
Allen, Texas 75002
1-800-527-4747

Houghton-Mifflin
P.O. Box 683
Hanover, New Hampshire 03755
1-800-258-9773

MECC
3490 Lexington Avenue, North
St. Paul, Minnesota 55126
(612) 481-3500

Optimum Resource, Inc
Norfolk, Connecticut 06058
542-5553

Scholastic
P.O. Box 7502, 2931 East McCarty Street (203)
Jefferson City, Missouri 65102
1-800-325-6149

Spinnaker
1 Kendall Square
Cambridge, Massachusetts 02139
(617) 548-0759

Sunburst
30 Washington Avenue
Pleasantville, New York 10570
1-914-769-5080

Walt Disney
Educational Media
108 Wilmot Road
Deerfield, Illinois 60015
1-800-621-2131

Devices/Software

Sound/Speech	Vendor	Cost
Echo II+	Street Electronics 1140 Mark Ave Carpinteria, CA 93013 1-805-684-4593	$149.95
	Tarmac 71 N. Market Street Asheville, NC 28108 1-800-222-08270	
Visual/Tactile		
Touch Window	Sunburst 30 Washington Ave Pleasantville, NY 10570 1-914-769-5080	$199.95
	Tarmac 71 N. Market Street Asheville, NC 28108 1-800-222-08270	
Keyboard/Data Entry		
Muppet Keys	Sunburst 30 Washington Ave Pleasantville, NY 10570 1-914-769-5080	$79.95

*requires minimum of 128K

PROFESSIONAL RESOURCES

EXCEPTIONAL CHILDREN RESOURCES

Reprinted by permission of Closing the Gap, Inc.
Division of Computer Services
Media and Technology Services
N. C. Department of Public Instruction
Raleigh, North Carolina 27603-1712

Typing Tutors

Product Name	Price			
Coinsnkeys	$45.00			
Castle Special Computer Services, Inc.	505-293-8379	9801 San Gabriel N.E.	Albuquerque NM 87111
*CompuKeys Keyboarding Series	$39.95			
CompuKeys, Inc. + management (300 kids)	612-641-0039	P.O. Box 8142	St. Paul MN 55108
Computer Software for the Exceptional	$99.95			
Communication Skill Builders	602-323-7500	P.O. Box 42050	Tucson AZ 85733
Jr. Typer	$45.00 (two			
Aquarius People Materials, Inc.	813-595-7890	P.O. Box 126	Indian Rocks Beach FL 33535
Key-Words: Special Ed Version	$49.00			
Humanities Software	213-402-8231	P.O. Box 590727	San Francisco CA 94159
Keyboard Command	$34.95			
Compu-Tations, Inc.	313-689-5059	P.O. Box 502	Troy MI 48099
Keyboarder	$29.95			
Sunset Software	213-476-1245	11750 Sunset Blvd., Ste.	Los Angeles CA 90049
Keys to Success: Computer Keyboard Skills	$35.00			
Life Science Associates	516-472-2111	1 Fenimore Rd.	Bayport NY 11705
KINDER KEYBOARD	$34.95			
EBSCO Curriculum Materials	205-991-6600-Ex:208	Box 1943	Birmingham AL 35201
KRS: Keyboarding/Reading/Spelling	$180.00			
Instructional Communication Technology, Inc.	516-549-3000	10 Stepar Place	Huntington Station NY 11746
Letter Recognition	$29.95			
Hartley Courseware, Inc.	517-646-6458	P.O. Box 431	Dimondale MI 48821
Mastertype	39.95;			
Scarborough Systems, Inc.	914-332-4545	55 S. Broadway	Tarrytown NY 10591
Software for Visually Impaired Children	$50.00 (plus			
Sensory Aids Corp.	312-786-3935	206 W. Grand Ave., Ste. 110	Bensenville IL 60106
*Talking Writer works w/ Echo	$24.95			
Cross Educational Software	318-255-8921	1802 N. Trenton St., P.O.	Ruston LA 71270
Type to Learn	$69.00			
Sunburst Communications	914-769-5030	39 Washington Ave.	Pleasantville NY 10570
Type-Talk	$49.95			
Lorin Software	713-461-1666	P.O. Box 7986	Houston TX 77270
Typemaster	$60.00			
M.D. Fullmer & Associates	408-997-1154	1132 Via Jose, Ste. D	San Jose CA 95120
Typing Teacher	$19.95			
Compu-Tations, Inc.	313-689-5059	P.O. Box 502	Troy MI 48099
Typing Well	$49.95			
Learning Well	516-621-1540	200 S. Service Rd.	Roslyn Heights NY 11577

Word Processing

Product Name	Price			
Abbreviation/Expansion	$75.00			
Zygo Industries, Inc.	503-297-1724	P.O. Box 1008	Portland OR 97207
Bank Street Storybook	d$49.95			
Mindscape, Inc.	312-480-7667	3444 Dundee Rd.	Northbrook IL 60062
Bank Street Writer	$69.95			
Broderbund Software, Inc.	415-479-1700	17 Paul Dr.	San Rafael CA 94903
BE A WRITER	$40.00			
Sunburst Communications	914-769-5030	39 Washington Ave.	Pleasantville NY 10570
BEX (BRAILLE-EDIT Xpress)	$400.00			
Raised Dot Computing, Inc.	608-257-9595	408 S. Baldwin St.	Madison WI 53703
BRAILLE-EDIT	$300.00			
Raised Dot Computing, Inc.	608-257-9595	408 S. Baldwin St.	Madison WI 53703

Creative Writer	$49.95,			
Activision, Inc.	415-960-0410	Drawer 7286	Mountain View CA 94039	
Format II	$150.00			
Kensington Microware Ltd.	212-475-5200	251 Park Ave. S.	New York NY 10010	
French Kidwriter	$37.95			
Gessler Educational Software	212-673-3113	900 Broadway	New York NY 10003	
Helpful Writer	$49.95			
Learnco, Inc.	603-778-0813	Box L	Exeter NH 03833	
I CAN WRITE	40.00			
Sunburst Communications	914-769-5030	39 Washington Ave.	Pleasantville NY 10570	
Kurzweil Reading Machine Software	$19,800.00			
Kurzweil Reading Machine		185 Albany St.	Cambridge MA 02139	
Large Print Typesetting Program	$205.00			
Kinetic Designs, Inc.	206-565-6727	4113C Bridgeport Way	Tacoma WA 98466	
Let's Explore Word Processing	$39.95			
Media Materials, Inc.	301-235-1700	2936 Remington Ave.	Baltimore MD 21211	
Magic Slate	99.95			
Sunburst Communications	914-769-5030	39 Washington Ave.	Pleasantville NY 10570	
Magic Window IIe	$149.95			
Artsci, Inc.	818-885-2922	5547 Satsuma Ave.	N. Hollywood CA 91601	
Map Writer	not available			
Hugh MacMillan Medical Centre	416-425-6220	350 Rumsey Rd.	Toronto ON M4G 1R8	
Peachy Writer Bold	$24.95			
Cross Educational Software	318-255-8921	1802 N. Trenton St., P.O. Box	Ruston LA 71270	
ProWORDS	$195.00			
Access Unlimited - SPEECH Enterprises	713-461-1666	10622 Fairlane Dr.	Houston TX 77024 77024	
Study Buddy	$40.00			
Ed Marquette	713-461-1666	P.O. Box 7986	Houston TX 77270	
Talking Writer	$24.95			
Cross Educational Software	318-255-8921	1802 N. Trenton St., P.O. Box	Ruston LA 71270	
The Logo Project Book: Exploring Words and	$19.95			
Terrapin, Inc.	617-492-8816	222 Third St.	Cambridge MA 02142	
The Newsroom	$59.95;			
Springboard Software, Inc.	612-944-3915	7808 Creekridge Circle	Minneapolis MN 55435	
The Works! A Complete Collection of Home	$49.95			
First Star Software, Inc.	212-532-4666	18 E. 41st	New York NY 10017	
TranscriBEX	$500.000			
Raised Dot Computing, Inc.	608-257-9595	408 S. Baldwin St.	Madison WI 53703	
Word-Talk	$195.00			
Computer Aids Corporation	219-422-2424	124 W. Washington, Ste. 220	Fort Wayne IN 46802	
Work-Station	$295.00			
Computer Aids Corporation	219-422-2424	124 W. Washington, Ste. 220	Fort Wayne IN 46802	

Authoring Systems

Product Name	Price		
Alien Action	$44.00		
DLM Teaching Resources	214-248-6300	One DLM Park	Allen TX 75002
Author (The)	$195.00		
Raptor Systems, Inc.	612-430-2980	324 Main St., Ste. 1	Stillwater MN 55082
Automatic Test Author (ATA)	$89.95		
Resource Software International, Inc.	201-738-6500	330 New Brunswick Ave.	Fords NJ 08863
Bainum Dunbar Brainz	$230.00		
Bainum Dunbar, Inc.	713-988-0887	6427 Hillcrest, Ste. 133	Houston TX 77081
Bank Street Storybook	d$49.95		
Mindscape, Inc.	312-480-7667	3444 Dundee Rd.	Northbrook IL 60062

Brainz-Gamz Bairum Dunbar, Inc.	$79.95 713-988-0887	6427 Hillcrest, Ste. 133	Houston TX 77081
Campaign Math MindPlay c/o Methods and Solutions, Inc.	$39.99 617-438-5454	82 Montvale Ave.	Stoneham MA 02180
Cat'n Mouse MindPlay c/o Methods and Solutions, Inc.	$39.99 617-438-5454	82 Montvale Ave.	Stoneham MA 02180
Cognitive Rehabilitation Series Hartley Courseware, Inc.	$595.00, 517-646-6458	P.O. Box 431	Dimondale MI 48821
Control Without Keyboards J. Jordan Associates	$299.00 414-739-6269	1127 Oxford Ct.	Neenah WI 54956
Crossword Magic Mindscape, Inc.	$59.95 312-480-7667	3444 Dundee Rd.	Northbrook IL 60062
DPS with HELP or BCP VORT Corporation	$195.00 415-322-8282	P.O. Box 60132	Palo Alto CA 94306
E-Z Pilot Hartley Courseware, Inc.	$79.95 517-646-6458	P.O. Box 431	Dimondale MI 48821
EZ Pilot for the PowerPad Dunamis, Inc.	$29.95 404-476-4934	2656 Buford Hwy.	Duluth GA 30136
Flexiscan Expert Systems Software, Inc.	$39.95 615-298-4397	823 Van Leer Dr.	Nashville TN 37220
Idea Invasion DLM Teaching Resources	$44.00 214-248-6300	One DLM Park	Allen TX 75002
Kennedy Handi-Math Program Kennedy Memorial Hospital	$100.00 617-254-3800	30 Warren St.	Brighton MA 02135
Kid Bits Words Fair Potomac MicroResources, Inc.	$49.00 301-299-2177	P.O. Box 277	Riverdale MD 20737
Learning Box (The) M.D. Fullmer & Associates	$50.00 408-997-1154	1132 Via Jose, Ste. D	San Jose CA 95120
Microinstructor C.V. Mosby Company	$995.00 314-872-8370	11830 Westline Industrial	St. Louis MO 63146
Passport: The Courseware Creator Gessler Educational Software	$195.00 212-673-3113	900 Broadway	New York NY 10003
PII (Personal Information for Independence) Southern Micro Systems	$49.00 919-226-7610	P.O. Box 2097	Burlington NC 27216-2097
ProWORDS Access Unlimited - SPEECH Enterprises	$195.00 713-461-1666	10622 Fairlane Dr.	Houston TX 77024 77024
Talking Public Domain Software The Communicator Publishers	$5.00 (each) 703-766-3869	Rt. 4, Box 263	Hillsville VA 24343
The Newsroom Springboard Software, Inc.	$59.95; 612-944-3915	7808 Creekridge Circle	Minneapolis MN 55435
Visual/Perceptual Diagnostic Testing & Educational Electronic Technologies, LTD	$650.00 515-221-4173 (NY)	1888 Wantagh Ave.	Wantagh NY 11793
Vocabulary Prompter Jagdstaffel Software	$29.95 408-578-1643	645 Brenda Lee Dr.	San Jose CA 95123
Wiz Works DLM Teaching Resources	$44.00 214-248-6300	One DLM Park	Allen TX 75002

Alternative Keyboards

Product Name	Price			
ACS SpeechPAC/Epson with Photo Board and Adaptive Communication Systems, Inc.	$3,995.00 412-264-2288	Box 12440	Pittsburgh PA 15231
ACS SpeechPAC/Epson with Unicorn Board* Adaptive Communication Systems, Inc.	$2,890.00 412-264-2288	Box 12440	Pittsburgh PA 15231
ACS SpeechPAC/Epson* Adaptive Communication Systems, Inc.	$2,995.00 412-264-2288	Box 12440	Pittsburgh PA 15231
ACS SpeechPAC/ScanPAC/Epson* Adaptive Communication Systems, Inc.	$3,695.00 412-264-2288	Box 12440	Pittsburgh PA 15231
AICES* ADAMLAB	$150.00 313-467-1415	33500 Van Born Rd.	Wayne MI 48184
Computer Entry Terminal Prentke Romich Co.	$1,492.00 216-262-1984	1022 Heyl Rd.	Wooster OH 44691
Dvorak One Handed Keyboard Typewriting Institute for the Handicapped	$650.00 602-939-5344	3102 W. Augusta Ave.	Phoenix AZ 85051
Expanded Keyboard Model 1 Unicorn Engineering Co.	$295.00 415-428-1626	6201 Harwood Ave.	Oakland CA 94618
Expanded Keyboards for the Adaptive EKEG Electronics Co. LTD.	$250.00 (44 604-273-4358	P.O. Box 46199, Sta. G	Vancouver BC V6R 4G5
Expanded Keyboards for Trace Center's EKEG Electronics Co. LTD.	$850.00 604-273-4358	P.O. Box 46199, Sta. G	Vancouver BC V6R 4G5
Expanded Pressure Sensitive Keyboards* Cacti Computer Services	$720.00 204-857-8675	130 9th St., S.W.	Portage la Prairie BC R1N 2N4
EyeTyper (The) Sentient Systems Technology, Inc.	$2,995.00 412-682-0144	5001 Baum Blvd.	Pittsburg PA 15213
Flexcom (The)* Furalletech Systems, Inc.	$1,495.00 319-626-8101	P.O. Box 190	N. Liberty IA 52358
KEASYBOARD Parallel Systems, Co.	$750.00 604-943-6769	P.O. Box 58435	Vancouver BC V6P 6K2
King Keyboard TASH Inc. (Technical Aids & Systems for the Handicapped)	$975.00 416-475-2212	70 Gibson Dr., Unit 12	Markham ON L3R 4C2
Light Talker Prentke Romich Co.	$2,550.00 216-262-1984	1022 Heyl Rd.	Wooster OH 44691
Membrane Keyboard TASH Inc. (Technical Aids & Systems for the Handicapped)	$600.00 416-475-2212	70 Gibson Dr., Unit 12	Markham ON L3R 4C2
Mini Keyboard TASH Inc. (Technical Aids & Systems for the Handicapped)	$225.00 416-475-2212	70 Gibson Dr., Unit 12	Markham ON L3R 4C2
Remote Keyboard for the Apple IIe, II+ EKEG Electronics Co. LTD.	$750.00 604-273-4358	P.O. Box 46199, Sta. G	Vancouver BC V6R 4G5
Ten Key Board (The)* EKEG Electronics Co. LTD.	$350.00, 604-273-4358	P.O. Box 46199, Sta. G	Vancouver BC V6R 4G5
TOUCH TALKER Prentke Romich Co.	$1,955.00 216-262-1984	1022 Heyl Rd.	Wooster OH 44691

Keyboard Emulators

Product Name	Price		
Adaptive Firmware Card Adaptive Peripherals, Inc.	$400.00 206-633-2610	4529 Bagley Ave. N.	Seattle WA 98103

AICES*	$150.00			
ADAMLAB	313-467-1415	33500 Van Born Rd.	Wayne MI 48184	
Compudapter*	$1,300.00			
RM Systems, Inc.	213-534-1660	22903 Fern Ave.	Torrance CA 90505	
EyeTyper (The)	$2,995.00			
Sentient Systems Technology, Inc.	412-682-0144	5001 Baum Blvd.	Pittsburg PA 15213	
Flexcom (The)*	$1,495.00			
Furalletech Systems, Inc.	319-626-6101	P.O. Box 190	N. Liberty IA 52358	
ICOMM	$2,495.00			
Intex Micro Systems Corp.	313-540-7601	725 S. Adams Rd., Ste. L-8	Birmingham MI 48011	
Keyboard Interface for the Apple II, IIc, IIe,	$275.00-37			
Prentke Romich Co.	216-262-1984	1022 Heyl Rd.	Wooster OH 44691	
Micro-DEC II*	$1,886.00			
Medical Equipment Distributors, Inc.		3223 S. Loop 289, Ste. 150	Lubbock TX 79423	
MOD	$230.00			
TASH Inc. (Technical Aids & Systems for the Handicapped)	416-475-2212	70 Gibson Dr., Unit 12	Markham ON L3R 4C2	
scanWRITER	$4,000.00			
Zygo Industries, Inc.	503-297-1724	P.O. Box 1008	Portland OR 97207	
SpeechAid	$2,495.00			
Intex Micro Systems Corp.	313-540-7601	725 S. Adams Rd., Ste. L-8	Birmingham MI 48011	
TETRAscan II	$2,050.00			
Zygo Industries, Inc.	503-297-1724	P.O. Box 1008	Portland OR 97207	
Words+ Living Center III	$2,667.00-			
Words+, Inc.	408-730-9588	1125 Stewart Ct., Ste. D	Sunnyvale CA 94086	
ZYGO Model 100 Communication	$1,750.00			
Zygo Industries, Inc.	503-297-1724	P.O. Box 1008	Portland OR 97207	

Game Port Input

Product Name	Price		
Adaptive Firmware Card	$400.00		
Adaptive Peripherals, Inc.	206-633-2610	4529 Bagley Ave. N	Seattle WA 98103
Apple Computer Input Adapter	$40.00		
Steven E. Kanor, Ph.D. Inc.	914-478-0960	8 Main St.	Hastings on Hudson NY 10706
Apple IIe Joystick Input Adapter*	$89.00		
Life Science Associates		1 Fenimore Rd.	Bayport NY 11705
E-Z Port Plug	$24.95		
Versa Computing, Inc.	805-498-1956	887 Conestoga Circle	Newbury Park CA 91320
Koala Pad	$79.95		
Koala Technologies, Inc.	408-435-8883	2055 Junction	San Jose CA 95131
Muppet Learning Keys	$79.95		
Sunburst Communications	914-769-5030	39 Washington Ave.	Pleasantville NY 10570
PowerPad	$99.95		
Dunamis, Inc.	404-476-4934	2856 Buford Hwy.	Duluth GA 30136
Regenesis Breath Switch	$150.00		
Regenesis		451-810 West Broadway	Vancouver BC V5Z 4C5
Scooter Zero Force Game Ports	$22.50		
OHM Electronics		748 Vermont St.	Palatine IL 60067
Switch Interface	$34.50		
Don Johnston Developmental Equipment, Inc.	312-438-3478	900 Winnetka Ter.	Lake Zurich IL 60047
Switch Interface for Apple IIc and IIe	$43.00		
Prentke Romich Co.	216-262-1984	1022 Heyl Rd.	Wooster OH 44691

Switch Interface for the Apple II, IIe, II+	$72.00			
Prentke Romich Co.	216-262-1984	1022 Heyl Rd.	Wooster OH 44691	
TouchWindow	$199.95-$2			
Personal Touch Corporation	408-246-8822	4320-290 Stevens Creek	San Jose CA 95129	
Words+ Living Center III	$2,667.00-			
Words+, Inc.	408-730-9588	1125 Stewart Ct., Ste. D	Sunnyvale CA 94086	

Dedicated Communicators

Product Name	Price		
ACS SpeechPAC/Epson with Photo Board and	$3,995.00		
Adaptive Communication Systems, Inc.	412-264-2288	Box 12440	Pittsburgh PA 15231
ACS SpeechPAC/Epson with Unicorn Board*	$2,890.00		
Adaptive Communication Systems, Inc.	412-264-2288	Box 12440	Pittsburgh PA 15231
ACS SpeechPAC/Epson*	$2,995.00		
Adaptive Communication Systems, Inc.	412-264-2288	Box 12440	Pittsburgh PA 15231
ACS SpeechPAC/ScanPAC/Epson*	$3,695.00		
Adaptive Communication Systems, Inc.	412-264-2288	Box 12440	Pittsburgh PA 15231
EyeTyper (The)	$2,995.00		
Sentient Systems Technology, Inc.	412-682-0144	5001 Baum Blvd.	Pittsburg PA 15213
ICOMM	$2,495.00		
Intex Micro Systems Corp.	313-540-7601	725 S. Adams Rd., Ste. L-8	Birmingham MI 48011
Light Talker	$2,550.00		
Prentke Romich Co.	216-262-1984	1022 Heyl Rd.	Wooster OH 44691
scanWRITER	$4,000.00		
Zygo Industries, Inc.	503-297-1724	P.O. Box 1008	Portland OR 97207
SpeechAid	$2,495.00		
Intex Micro Systems Corp.	313-540-7601	725 S. Adams Rd., Ste. L-8	Birmingham MI 48011
TOUCH TALKER	$1,955.00		
Prentke Romich Co.	216-262-1984	1022 Heyl Rd.	Wooster OH 44691
ZYGO Model 100 Communication	$1,750.00		
Zygo Industries, Inc.	503-297-1724	P.O. Box 1008	Portland OR 97207

Echo and Cricket Compatible Software

The following companies publish software which is compatible with the Echo, the Cricket, or both. Consult the individual developers for system requirements.

This is not a definitive list. It represents those Echo developers we were aware of as of March 17, 1987.

EDUCATIONAL SOFTWARE

AIMS Media 6901 Woodley Avenue Van Nuys CA 91406 (818) 785-4111	Sam's Store (Math) Getting Started in... Series
Ballard & Tighe, Inc. 480 Atlas Street Brea CA 92621 (714) 990-4332	IDEA Cat, Elephant Ears
Bertamax 3647 Stone Way North Seattle WA 98103 (206) 547-4056	18 different titles
C.C. Publications P.O. Box 23699 Tigard OR 97062 (503) 692-6880	The Ollie Hears Series, Basic Language Series
Chatterbox 2265 Westwood Blvd. Suite 9 Los Angeles CA 90064 (800) 531-5314	Voice Reading,Voice English
Communication Skill Builders 3130 North Dodge Blvd. Tucson AZ 85733 (602) 323-7500	Idioms in America ESL
Computer Tutor 1543 Avenue K Plano TX 75074 (800) 442-4719	ESL
DLM Teaching Resources One DLM Park Allen TX 75002 (214) 248-6300	Syllasearch, Construct-A-Word Hint and Hunt
Developmental Equipment 900 Winnetka Terrace Lake Zurich, IL 60047	Numerous special education software titles

EDUCATIONAL SOFTWARE (cont.)

Early Learning, Inc. P.O. Box 712 Devon PA 19333 (215) 687-1331	Kindermath
Edmark Corporation P.O. Box 3903 Bellevue WA 98009 (206) 746-3900	Edmark Reading Program
Educational Activities 1937 Grand Avenue Baldwin, NY 11510 (516) 223-4666	Adult Literacy
Electronic Arts 2755 Campus Drive San Mateo CA 94403	Music Construction Set (Echo+ or Cricket) Adventure Construction Set (Cricket only)
Hartley Courseware P.O. Box 419 Diamondale MI 48821 (800) 247-1380	Easy Pilot (authoring language) Dr. Peet's Talk Writer, My Words
HCCCP/Sherwood Center 7938 Chestnut Kansas City MO 64132 (816) 363-4606	Color Find Letter Find Prepositions Sight Word Spelling
Houghton Mifflin P.O. Box 683 Hanover NH 03755 (603) 448-3838	Sound Ideas Series
Laureate Learning 110 East Spring Street Winooski VT 05404 (802) 655-4755	Speak Up, FAST, ACE, First Words, MicroLADS, First Categories
Life Science Associates 1 Fenimore Road Bayport, NY 11705 (516) 472-2111	Arithmetic 1, 2, and 3
Marblesoft 21805 Zumbrota Street NE Cedar MN 55011 (612) 434-3704	Early Learning I, II, Mix 'n Match

EDUCATIONAL SOFTWARE (cont.)

Microcomputer Applications RD#2, Box 229 Selinsgrove PA 17870	Goldilocks and the Three Bears
PEAL Software 2210 Wilshire Blvd., #806 Santa Monica CA 90403 (213) 451-0997	Keytalk Exploratory Play Early Education Representational Play
Polytel 2727 E. 21st Street, Suite 600 Tulsa OK 74144	The Farm, Safari Requires Polytel Keyport 717
Research Triangle Software P.O. Box 13044 Research Triangle Park NC 27709 (919) 851-0866	Wordmaster
Scholastic Software 730 Broadway New York NY 10003 (212) 505-3000	Talking Screen Text Writer - Early Education Talking Word Processor
SEI 111 Fielding Lewis Drive Grafton VA 23692	Master Talker SAT drill and other High School level programs.
Sensible Software, Inc. 210 S. Woodward, Suite 229 Birmingham MI 48011 (313) 258-5566	Talking Sensible Speller
Southwest Ed-Psych Services P.O. Box 1870 Phoenix, AZ 85001 (602) 253-6528	Tic-Tac-Spell

SPECIAL NEEDS SOFTWARE

Adaptive Peripherals, Inc. 4529 Bagley Avenue North Seattle WA 98103 (206) 633-2610	The Talking Word Board. The Talking Scanner The Talking Unicorn
CITE 215 E. New Hampshire Avenue Orlando FL 32804 (305) 299-5000 X3291	Augmentative communication program
Castle Special Computer Services 9801 San Gabiel, NE Albuquerque NM 87111 (505)293-8379	Spellist, Coins 'n Keys
Closing the Gap P.O. Box 68 Henderson MN 56044 (612) 248-3294	Special Needs Resource
Computability 101 Route 46 East Pine Brook NJ 07058 (201) 882-0171	Power Pad Programmer
The Conover Company P.O. Box 155 Omro WI 54963 (414) 685-5707	Nuts & Bolts SAID Survival Words
David R. Beukelman, Ph.D. University of Nebraska-Lincoln 318 Barkley Memorial Ctr. Lincoln NE 68583-0738 (402) 472-5463	Publishes a communication program.
Dunamis 2856 Buford Highway Duluth GA 30136 (404) 476-4934	SimpleCom I, SimpleCom II
Educational Software Review 1400 Shattuck Avenue, Suite 774 Berkeley CA 94709 (415) 528-2788	Magic Music Teacher (requires Echo+ or Cricket)
HCCCP/Sherwood Center 7938 Chestnut Kansas City MO 64132 (816) 363-4606	Color Find Letter Find Prepositions Sight Word Spelling

SPECIAL NEEDS SOFTWARE (cont.)

Hugh MacMillan Medical Centre 350 Rumsey Toronto, ON CANADA M4G 1R8 (416) 425-6220	Augmentative software for children
Laureate Learning 110 East Spring Street Winooski VT 05404 (802) 655-4755	Speak Up, FAST, ACE, First Words,MicroLADS, First Categories
Project ACTT 27 Horrabin Hall Western Illinois University Macomb IL 61455 (309) 298-1634	Peek and Speak
R.J. Cooper & Associates 24843 Del Prado, Suite 283 Dana Point, CA 92629 (714) 240-1912	Point to Pictures Series
Schneier Communication Unit 1603 Court Street Syracuse NY13208 (315) 455-7591	Quick Talk, Sound Match,
Speech Enterprises/Access Unltd. 9039 Katy Freeway, Suite 414 Houston TX 77024 (713) 461-0006	Resource for Special Needs

SOFTWARE FOR THE BLIND/VISUALLY IMPAIRED

American Printing House f/t Blind P.O. Box 6085 Louisville KY 40206-0085 (502) 895-2405 x315	Speaking Speller Elementary Math Talking Games
Apple Talk 3015 South Tyler Little Rock AR 72204 (501) 666-6552	Utility Talk, Trivia Talk, TextWriter, Fortune Talk, Fitness Talk. Publishes "Apple Talk" newsletter on disk.
Area Education Agency 6 210 South 12th Avenue Marshalltown IA 50158 (515) 752-1578	Southern Prairiesoft Word Tutor
Bainum Dunbar Inc. P.O. Box 742028 Houston TX 77274 (713) 988-0887	Brainz Gamz
Bible Research Systems 2013 Wells Branch Parkway, #304 Austin TX 78728 (512) 251-7541	Publishes the Bible on ECHO-readable disks.
Bucks County Schools Routes 611 & 313 Doylestown PA 18901 (215) 757-0227	Talking...(Typing, Spelling, Math, Place Value, Flash Cards), TextTutor , Language Board (requires Muppet Keyboard)
Carriere Systems 519 Valley Forge Drive Placentia CA 92670 (714) 524-1488	Check Book Budgeting, Glossary, Addresses
Ciderware 1019 Martinique Dallas TX 75223-1445 (214) 827-7734	Call Talker - Spreadsheet Lister Talker - File Manager Ledger Talker - Bookkeeper
CITE 215 E. New Hampshire Avenue Orlando FL 32804 (305) 299-5000 X3291	Augmentative communication program
Computer Aids Corporation 124 West Washington, Lower Arcade Fort Wayne IN 46802 (219) 422-2424	Word-Talk, Calc-Talk, Braille-Talk, Screen Talk, Talking Transend

SOFTWARE FOR THE BLIND/VISUALLY IMPAIRED
(cont.)

Criterion Micro Soft P.O. Box 847 Iowa City IA 52244 (391) 338-8669	Word Mentor
Cross Educational Software 1802 N. Trenton Ruston LA 71720 (318) 255-8921	Talking Writer, Talking Riddles
Howard K. Traxler 6504 W. Girard Avenue Milwaukee WI 53210 (414) 445-5925	Trax Pax, Checkbook, Filebox
Keith Creasey 1956 Mellwood Avenue Louisville KY 40206 (502) 896-0132	Personal finance programs.
Lorin Software 365 Brassie Orlando FL 32804 (305) 423-7547	Type-Talk, Talking typing Tutor
Raised Dot Computing, Inc. 408 S. Baldwin Street Madison WI 53703 (608) 257-9595	Braille-Edit
Read-Well, Inc. P.O. Box 441047 Aurora CO 80044 (303) 690-6004	Video Reader
Schneier Communication Unit 1603 Court Street Syracuse NY 13208 (315) 455-7591	Quick Talk, Sound Match, Magic Cymbals, Say It
Sensory Aids Foundation 399 Sherman Avenue, Suite 12 Palo Alto CA 94306 (415) 329-0430	Publishes software for visually impaired children
Larry Skutchan 337 S Peterson Louisville KY 40206 (502) 896-1288	ProWords, ProTerm Teacher's Pet Talking Word Processor

SOFTWARE FOR THE BLIND/VISUALLY IMPAIRED
(cont.)

Smith-Kettlewell Institute 2232 Webster San Francisco CA 94115 (415) 561-1630	Talking Checkbook Program Talking Games
SPEECH Enterprises/Access Unltd. 10622 Fairlane Drive Houston TX 77024 (713) 461-1666	Tall Talk Screens, Tall Talk Prints, Tex-Talk, Talking TFD

The following programs, developed by other companies, are available through SPEECH Enterprises/Access Unltd. (see above)

Peter Scialli	Ultimate Banker Ultimate File Cabinet
Pete Rossi	Audio Tutorial Braille Game
Quinsept	Talking Term Exec
Tell'n Spell	Walt Sautter
Talking Computer Products 100 Main Wallace KS 67761 (913) 891-3532	Publishes talking check book program and 4 talking game disks
Talking Computer Systems P.O. Box 524 Revere MA 02151 (617) 289-3828	Phone List and Filing Program
The Communicator Rt. 4, Box 263 Hillsville VA 24343 (703) 766-3869	10 Public domain talking disks

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The book has a wide range of applications and should be useful to parents, teachers, specialists of vision, hearing, speech, physical and occupational therapists, and other friends of the handicapped.

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- POTTY TRAINING SWITCH
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- MOTOR DEVELOPMENT
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Price/Earning Ratio: Stock price divided by estimated earnings

Range: The difference between the high and low price of a Future during a given period, as in one day's trading session.

Ratio Analysis: Analysis of the relationship of items in financial statements. The relationships are expressed as either ratios or percentages.

Securities: Corporate issues which are traded on the Securities Market. There are four classifications of securities: (1) railroad, (2) public utility, (3) industrial, and (4) financial.

Stockholder: An individual, partnership, or corporation that owns one or more shares of corporate stock.

Yield: A measure of annual return on the purchase price of a share of stock. (The yield and dividend rate on a share of stock will not necessarily be the same.)